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IN THE
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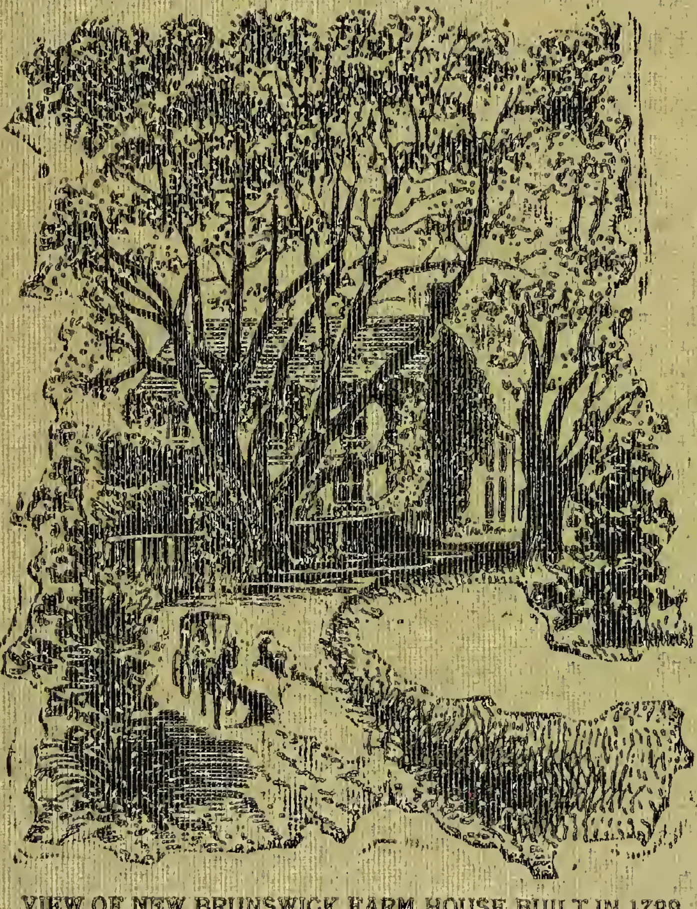

VIEW OF NEW BRUNSWICK FARM HOUSE BUILT IN 1799.

HOWARD TRUEMAN.

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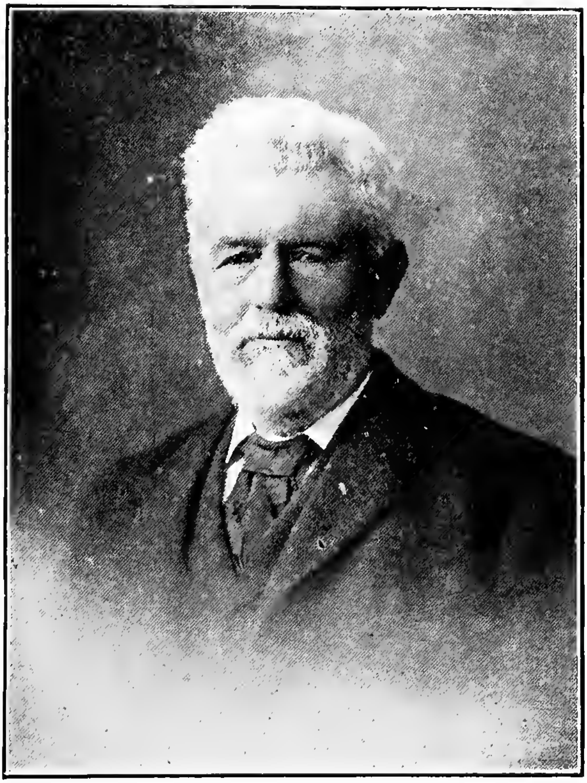

HOWARD TRUEMAN, POINT DE BUTE, N. B.

EARLY AGRICULTURE

IN THE ATLANTIC PROVINCES

* * *

BY

HOWARD TRUEMAN

AUTHOR OF "THE CHIGNECTO ISTHMUS AND ITS FIRST SETTLERS."

* * *

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INTRODUCTION.

Agriculture is the greatest of Canadian industries. It is the one also which is most rapidly expanding. In the Statistical Year Book of Canada the metallic products are valued at $25,183,876 for the year 1901. If we add to these the abrasives, fuel pigments, structural machines, etc., we reach a total product from the earth of less than 50 millions of dollars. The products of our cheese factories amount to $29,462,404, to which must be added $7,000,000 for home made cheese, a number far in excess of the metallic products of our mines. Eggs alone reach the enormous value of $84,132,000. The Canadian hen has therefore good reason for her noisy self-congratulation when she adds to this great national product. The patient cow, however, surpasses the hen, for the home made butter of Canada is valued at over $105,000,000 per year. Still more striking figures can be quoted which make the total annual value of the gold, silver and iron mines seem almost insignificant. The crops raised and sold have a value equal to $208,417,821 and the live stock $154,708,563, making a total of over 363 millions of dollars. The Cobalt of the farm is greater than the Cobalt of the mine. It is well, therefore, that this history of our leading industry should be written, for like all histories it must have its lessons for the present and the future. New methods are being proposed and new explanations are being given. We can adopt and use these more safely when we know what the history of agricultural methods have been. This volume will show that some of the methods which scientific men and enlightened governments are seeking to make universal, are supported by the best practice of high class farmers many years ago. The growth of knowledge as to the principles on which these methods are based will do much to bring the best methods into common use.

Dr. Saunders, the accomplished Director of Dominion Experimental Farms, in a paper read before the last meeting of the Royal Society of Canada, stated that it required more brains to be a first class farmer than an equally good man in any other profession. When one considers the physical, chemical, biological and economic problems which all at once a farmer has to face, to the investigation of which hundreds of the brightest minds have been devoted, it becomes evident that nothing but a high order of intelligence can acquire the requisite knowledge or achieve the requisite skill to obtain the greatest returns. Every branch of farming may become a fine art. The finest fertilizer, the most necessary implement and the most fruitful crop to be found on a farm is brain.

With our present knowledge it is not too much to say that with the same acreage, if we could syndicate all the farms of the country and scientifically organize the whole business as many of our great factories are organized, we could more than double the present value of our harvests. 600 bushels of potatoes can be raised on an acre. 400 bushels ought to be a practical ideal. That would be four times the present average. Over four tons of hay per acre can be grown; three tons should be common, which is nearly three times the average. Our greatest industry is to become greater yet, and through the application of scientific principles to its processes, through one of the greatest migrations of humanity known to history, namely that to our Canadian shores. The future historian will have a still more interesting tale to tell. Meanwhile the country is indebted to Mr. Howard Trueman for the story these pages so interestingly relate.

W. W. ANDREWS,
Mt. Allison University,
Sackville, N. B.

PREFACE.

For many years I had been watching with great interest the progress of Agriculture in these Atlantic Provinces, and in some degree had been identified with its advance. When age and failing health compelled me to give up the more strenuous life of the farm, as a means of passing the time more quickly and profitably, I turned my attention to putting in more permanent form some of the steps by which this development had been brought about.

It is not necessary to say that the work could have been done much better by some one more gifted and more painstaking. I do not, however, intend to make any apology further than to say that the repetition of some facts and dates that the reader may notice, is due in part to the fact that the work was laid aside for weeks and sometimes months at a time during the course of its preparation.

As will be noticed the book is largely a compilation and was written by a farmer for farmers ; and if it finds a welcome in the homes of a comparatively small number of the hundred thousand farmers of the Atlantic Provinces, the writer will be more than satisfied.

Some pictures of those connected with agriculture have been inserted. That of Mr. John Young, (Agricola) has not, so far as I know, been placed before the public before. The portrait of Mr. Young was found for this work after much search, by Mr. W. C. Milner, of Halifax. To Mr. Milner and all others who have given me assistance directly or indirectly I extend my hearty thanks.

H. T.

Prospect Farm, Point de Bute, Aug. 3rd, 1907.

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JOHN YOUNG (AGRICOLA) 1773-1837.

Early Agriculture in the Provinces.

CHAPTER 1.

EARLY AGRICULTURE IN NOVA SCOTIA.

Agriculture is the great industry of North America and this it must continue to be for years to come. Besides furnishing the staple food-products required by the one hundred million population of its own, this continent annually sends tens of millions of dollars worth of the necessaries of life to the thickly settled countries of the old world.

The contrast between the seventeenth and the twentieth century is most marked in this regard; in the seventeenth century the existence of the pioneer in America frequently depended upon the arrival of the ship from Europe with a supply of food for the famishing colony. Now it is to Europe we look to market the surplus of the farm after our wants have been supplied.

North America has an area of seven million nine hundred thousand square miles, seven millions of which belong to the United States and Canada in about equal proportion. The remaining nine hundred thousand are divided between Mexico, Central America and Newfoundland.

The eastern provinces of Canada, Nova Scotia, New Brunswick and Prince Edward Island, contain fifty thousand two hundred and fourteen square miles. Nova Scotia can fairly claim to be the oldest province in Canada, dating its birth either as a French or British colony. Its first record in British history as a colony of Great Britain was far from complimentary. In the history of the year 1750, Pinnock's Goldsmith's England, pages 339 and 400, we read: "A new colony having been founded in North America in the province of Nova Scotia, it was thought that thither the waste of an exuberant nation might well be drained off and those bold spirits kept in employment at a distance, who might be dangerous if suffered to remain in idleness at home. Nova Scotia was a place where men might be imprisoned, but not maintained; it was cold, barren and incapable of successful cultivation. Thus did the nation ungratefully send off her hardy victims to perish on inhospitable shores and this they were taught to believe would extend their dominions." An advertisement such as this was not calculated to send emigrants to the new colony, but on the contrary created a prejudice against the province that was very hard to overcome in subsequent years. In spite, however, of "cold winters" and "barren land" Nova Scotia ever after it was permanently taken possession of by England, steadily, if slowly at first, continued to advance, both in population and material wealth. It was not, however, until the beginning of the nineteenth century that the first real start in agricultural advance was made. The history of this advance reveals what one man can do in arousing public sentiment and fastening the attention of the public on a given subject. If old chronicles are to be relied upon the status of the agricultural industry had fallen low indeed in Nova Scotia in the early years of the last century. A writer of that time says: "There are many circumstances in this province connected with its agriculture and rural economy sufficient to beget and foster a generous indignation, and to awaken all the passions of a strong and elevated nature and which are apt to communicate their own fire to the composition." These were the degrading state of the profession of a farmer, the erroneous sentiments entertained regarding the climate and the gross ignorance of both theory and practice, in which the whole agricultural body was involved. In proof of this, the same writer says: "The keeper of a tavern or a tippling house, the retailer of rum, sugar or tea, the travelling chapman, the constable of the district, were far more important personages whether in their own estimation, or that of the public, than the farmer who cultivated his own lands. He was the lowest class in society, and gave place here to others who, according to the European standard of rank and consequence, are confessedly his inferiors. This sense of degredation was perceptible among husbandmen themselves. Such of them as were under the necessity of working set about it with great reluctance and always under a mortifying sense of shame. They would blush to be caught at the plow by their genteeler acquaintances as much as if surprised in the commission of a crime, and if they saw them approaching many would skulk from the field and plunge into the neighboring thicket. The children were easily infected with a humbling sense of inferiority, and the labors of the farm were to the young men objects of aversion, as those of the dairy were to the women. Hence the family were brought up with habits and feelings inconsistent with their station in life, and that respectable class of men known in England as the ancient yeomanry of the country, who were the owners and cultivators of their own lands, had no footing in the province." "Nova Scotia at that period," says the writer, "might justly be described as one vast grazing ground, destined for live stock; and if regular fences were anywhere erected, this trouble was taken to protect not white crops, but in nine cases out of ten, grass which was to be cut for winter fodder. Straw was so scarce that it generally fetched only a little less than hay and was often transported to market, a distance of fifty or sixty miles." (This was before the days of railroads). "To aggravate this misfortune the abandonment of tillage was defended by a numerous body of advocates, on the ground of barrenness of soil, and inclemency of the heavens. The country they maintained was only fit for pasturage, and would never repay the expense of regular cultivation. Beef and pork might be raised but flour and pot barley and oatmeal were beyond the utmost efforts of the climate."

While farming in the province was in the condition as above described there landed at Halifax a Sterlingshire Scotchman by the name of John Young. His father had intended his son for holy orders in the church but the young man declined to be a minister and finally after studying law drifted into trade and eventually decided to try his fortune in the new world, and the year 1814 found him in Halifax with such a stock of goods as he hoped would be suitable for the market in which he intended to offer them.

Mr. Young came from a country that throughout Europe, at that time, was looked upon as the home of the most skilful agricultural practice to be found anywhere. Speaking of Scotland at that time or later Prof. Johnson says: "Its climate has been tamed and deprived of its terrors. Its most northern portions in Caithness and even in the Orkney Islands have been subdued into the culture of wheat. Its plowmen are ranked among the best in the world, its thorough husbandry is universally praised, and its fat cattle and sheep from its northern counties are shipped regularly to the London market. Instead of indifference and contempt the art of culture was treated with respect and almost every proprietor was at once anxious to promote it and ambitious to know something as to the best mode of cultivating his estate."

Mr. Young had not been many years in this country before he noticed the great contrast between the Nova Scotia and the Scotch system of farming. He also took note of the widely different manner in which the people of Nova Scotia and those of Scotland looked at the respectability of the business, and apparently came to the conclusion that he would do what was in his power to lift the agriculture of his adopted country out of the degradation into which it had fallen. With this end in view he began in the year 1818 to write a series of letters on subjects relating to agriculture over the signature "Agricola." These letters were published in the Acadian Recorder, a Halifax newspaper, and at once caught the ear of the public. There were thirty-eight of the letters and they dealt with almost every phase of agricultural practice as at that time followed in the most advanced European countries. The first letter describes the low state of agriculture and the general commercial depression in the province. The second recommends the establishment of agricultural societies; the sixth takes up the climatic conditions, describes the causes that influence it; the ninth combats the prejudice which exists against the climate and shows from the nature of its vegetable productions that it will ripen all the principal grains. Then follows a series of letters on soil with a particular description of Nova Scotia soil. The sixteenth letter enumerates the purposes in agriculture of the different instruments of tillage.

Then comes a letter on plows, followed by one on the benefits that would be gained by the introduction of drill machines. Other letters deal with the harrow, roller, threshing mills, fans and reaping machine, the patent sward cutter and the cultivator and grubber. There are five letters devoted to the discussion of manures, animal and vegetable. It is shown how water and earth retain the gaseous and soluble principles of the putrescent manures; and errors are pointed out in the treatment of manures and remedies are suggested. The principle of fermentation is discussed and the nature of compost explained. The nature and the use of peat is set forth and how to convert it into manure. Fossil manure is referred to and three letters have for their subject, lime, the method of burning, how it should be applied and its supposed effect on vegetation. Gypsum (phosphate of lime) magnesia and its combinations, alkalies, neutral salts, burnt clay, are all treated on, winding up with some general observations, especially applicable to Nova Scotia. The last half dozen letters treat of the inequalities of the surface of the earth; also of stones and rocks, a surplus of water and describes Elkington's principle of drainage. The writer's opinions are likewise given of the cultivation of the land as affecting the individual, society and national wealth, concluding with a consideration of land in relation to its employment of capital.

The effect of these letters on the public mind of the province was electrical. The first letter was published July 13th, 1818, and before the close of the year Mr. Young as "Agricola" was in correspondence with leading men from every county in the province complimenting him upon the grand work he was doing. A central agricultural society had also been formed in Halifax with a membership of one hundred and twenty. The entrance fee to this society was twenty shillings and the Lieutenant Governor's donation was one hundred guineas. By February, seven months after the first letter was published, Agricola was in possession of more than two hundred and fifty letters from all ranks and conditions, and by April, fourteen Agricultural societies had been formed and several others were organized shortly after this date.

Mr. Young was made secretary of the Central Society and writes April 20th, 1819: "All the seeds destined for the fourteen societies are now ready to be delivered and the secretary is availing himself of suitable opportunities to despatch them. Those belonging to Pictou, Colchester, Kings and Union Kings County are shipped. The seeds for Sydney and Hants will be forwarded today, the first by a vessel of Cutler's to Manchester, the second by a private team."

In 1822 Mr. Young published his letters and a part of his correspondence with the leading men of the country, written during the publication of his letters in the Recorder. The title given the book was "The Letters of Agricola." "On the principles of vegetation and tillage written for Nova Scotia and published first in the Acadian Recorder by John Young, Secretary of the Provincial Agricultural Board and honorary member of the Massachusetts and Montreal Agricultural Societies."

Copies of this work are difficult to be had at the present time outside of Nova Scotia and probably in that province also. In a work of this kind there seems good reason for transcribing one at least of these letters in full and giving extracts from others so that modern readers interested in agricultural questions can have an opportunity of judging for themselves the quality of the work done in the interests of farmers in Eastern Canada nearly a century ago. Perhaps we, of this later time, may incur the risk of hearing it said, you have not improved your privileges.

Most of the letters were written before the public had the least idea who the writer was, and there seems to have been a very great curiosity to find out Agricola's real name. Writing on this subject to correspondents he says: "I must again caution my readers against all enquiries about myself, which have risen to an unprecedented height since the last public meeting. In every circle my ears are stunned with foolish speculation. The books sent me have been traced and watched. My handwriting has been subjected to every species of torture and examination. I have been compelled to steal from the notice of acquaintances the hours necessary for the hurried composition of later letters; and like the old woman in the fable the public seem determined to know the mystery of the eggs, although the experiment should tear the hen to pieces."

When the Central Agricultutal Society was organized—one of the first practical results of the letters—Agricola was made the secretary, although the meeting at which the society was formed had no idea which of its members was being elected to that office. He was proposed for the position by the Governor General as the following shows: "His Excellency then observed that the next appointment being that of secretary, it was an office important to the success of the whole plan. In an agricultural society such a person ought to possess qualifications adapted to that particular object. It appeared to him there was one person extremely capable of the office, and that was Agricola himself. He again assured the meeting that he was totally unknown to him, and he did not wish that the prying eye of public curiosity should endeavor to discover him, but to leave that matter to himself until he judged of the opportunity most favorable." Agricola was therefore appointed to the position, Hon. Judge Haliburton agreeing to fill the office till Agricola should come forward and declare himself, which in a few days he decided to do.

Twenty-five societies were organized in the province within two years. The Kings and Hants Society, though counted among the twenty-five, dates its foundation thirty years earlier, or in 1789, during the gubernatoral term of Governor Parr. A society had been formed in Halifax at the same time that the Kings society was organized, but it proved short lived. The Kings and Hants Society, however, was in the hands of men who were able to appreciate the value of the institution and it was now in a position to take advantage of the enthusiasm created by Agricola. A letter addressed to Agricola by the officers and committee of the society under date of July 13, 1819, congratulated him on the grand work he was doing, and contained an account of the formation of that society in 1789. This date (1789) makes the Kings Society one of the oldest, if not the oldest, agricultural society in Canada. Its first officers were:

Jonathan Crane, President.
John Thomas Hall, Vice President.
James Fullerton, Secretary.
James N. Shannon, Treasurer.
David Dennison, Steward.
Number of members on the roll, 107.

But this early date, 1789, was not the beginning of the first united movement in Nova Scotia in the interests of stock raising. An advertisement in the Nova Scotia Gazette of 1773, of races to take place at the Windsor Fair on June 15th and 16th offered one plate of twenty pounds and one of ten pounds in prizes for native bred horses. This Windsor Fair had been one of the institutions of the place for some years, as the following resolution passed at a public meeting would go to show: "Whereas it is thought that the establishing of a Fair at Windsor will be of great utility to the province, a number of the gentlemen of Halifax being desirous of promoting every measure that can conduce to the public good have entered into a subscription for premiums and rewards and will cause the following to be given on Tuesday, the 21st of May, 1765, the first day of the Fair."

For a person who would bring the greatest number of cattle the award was three yards of English blue superfine broad cloth and a silver medal. For horses the prize was a saddle, a bridle and a medal. For sheep a pair of sheers and a medal. Other prizes were a churn and a medal for the best cow, a whip and a pair of spurs for the best horse and six yards of ribbon and a medal for the best twelve pounds of butter or cheese. The best wrestler was offered a lace hat and a pair of spurs, while the next best got a pair of shoes and buckles and the third a pair of buckskin gloves.

Although the prizes at this early day were not in money, they were good value and probably were quite as highly appreciated by the successful competitors as the premiums given at the present time.

The following extracts from a letter written to Agricola from Amherst, dated January 7, 1819, speaks of the formation of the Cumberland Society and the public sentiment there. After giving the list of the names of those who composed the society the writer says: As it may suit anonymous writers to represent our society to be composed of the lower order of the inhabitants of the County of Cumberland you will probably think proper to give a list of its members and their subscriptions for publication. It will be seen by it that the Cumberland society comprises a large portion of the magistracy and of the respectability of the County. You will see annexed a copy of a letter addressed to one of the members of our committee by Mr. John McFarlane, a man residing at Fox Harbor, in this county, whose character entitles his statement to be readily believed. You will no doubt consider the information therein contained interesting; not only because it is proof from actual experiment of the beneficial effects which will flow from the general introduction of the drill system in the province; but also because it shows that farmers will not neglect communicating to the public the results of their experience when proper channels are opened for that purpose. These channels are the agricultural societies of each county.

Dr. Purdy, the secretary of our county, not having received any communication from the secretary of the Provincial society authorizing him to correspond, and the proceedings of the latter not being extensive enough to put in the shape of a formal report, I have taken the liberty of informing you of our purpose. The society closed its meeting with reiterated thanks to Agricola. I am much helped by your requesting my correspondence and I shall take an earlier opportunity of sending you a few remarks on the state of agriculture in this county.

I am, Sir, your very humble servant,

J. S. MORSE.

P. S.—A list of society members accompanies this letter; and the gross sum of donations and subscriptions amounts to £111, 7s., 6d. currency.

Agricola had other correspondents in Cumberland than Mr. Morse. Stephen Oxley, of River Philip, sent him a description of the county regarding its present state of agricultural improvement. Amherst, Fort Lawrence, Minudie, River Hebert, Maccan, Nappan, River Philip, Ramshag and Westchester are all briefly referred to in this communication. Speaking of Amherst Mr. Oxley says: "Amherst which contains the county town although very little elevated above the level of the sea, yet from its bleak and northwest aspect is considerably exposed to the chilling blasts from that quarter during the winter months. The farmers here do not pay that due regard or strict attention to agricultural pursuits which the importance of the subject commands; depending chiefly on their hay and pasturage which enables them to rear and keep stocks of cattle and sheep.

The marshes, although completely dyked and in many parts tolerably drained, lie almost in one boundless tract of uncultivated soil comprising some hundreds of acres unmarked by the furrow of the plough, and are capable of being improved to infinite advantage. These parts which have been judiciously drained and are becoming dry are generally appropriated to English hay as it is called, or to grazing, and are most admirable for the reception of the plough and with good management would teem with bread corn in great abundance. The uplands in their primitive state are not perhaps so rich as in some other parts of the country, but are in general capable of being highly improved by a regular mode of culture. Besides the vast heaps of dung produced from the barns which accumulate during the winter to a prodigious size, the immense and endless quantities of marsh mud at the very skirts of the upland are acquisitions which few farmers in the province can boast of, and lime, too, is evidently within their reach. Yet, strange to say, I know of only solitary instance in which that valuable fossil has been used as a manure. Possessed of all these local advantages I wonder not at the remark made by your respectable Onslow correspondent, after his tour through part of this county, that "Cumberland ought to be the granary of Nova Scotia." I think the observation was well applied, for I know of no county in the province that holds out greater inducements to begin and perfect the most approved systems of agriculture." Mr. Oxley's estimate written eighty-seven years ago of the agricultural capabilities of Cumberland were not overstated but when coal, which at that time was not mined to any extent, is added to the assets of this county, with the enhanced value of its lumber and its fishery privileges, Cumberland must take rank as one of the richest in natural resources of all the counties of that province.

Agricola had another correspondent from Cumberland, Thos. Roach, Esq., of Fort Lawrence. Mr. Roach took exception to some statements made by Mr. Young touching the climate of Nova Scotia. Mr. Young immediately wrote to Mr. Roach saying that nothing was further from his intentions than to slight his judgment or hurt his feelings. This brought a reply from Mr. Roach in which he states that he was willing, though still thinking Agricola to be sanguine about the climate, soil and season of this province to forego his own opinion and that of his friends, and meant never more to write anything that might be considered as opposing his laudable endeavors to stimulate the inhabitants of this province to be independent if possible of the United States for bread.

The war of 1812 between Great Britain and the United States opened the eyes of Nova Scotians to the danger of so largely depending upon the United States for wheat flour, and Agricola's letters were due in a considerable degree to a desire to make his adopted country independent of the United States for "bread corn."

The following letter received by Agricola from Colchester, contains so much that is interesting and brings out so distinctly the contrast between those days and the present that I have copied it in full:
To Agricola:

Sir,—I was bred in this country and am well pleased to see its improvement. I must confess that I had very little hopes of much good coming out of your letters at first, and although I read them like my neighbors, I rather wondered than was instructed, but I am now beginning to think that we shall be benefited in good earnest. In our settlement we have always (some good years excepted) had much difficulty in raising our own bread, and when our wheat crops failed the purchasing of flour was a great evil, and a heavy drain on us. Within two years I have had to reduce my stock of cattle to buy bread for my family, which not only hurt me but all our neighborhood. The mice did us serious injury and I am very mistrustful of them this season. The snow has so long covered the ground that I fear they will come out like locusts on us in the spring and summer and destroy the fruit of the earth. I wish some of your correspondents would turn your attention to these vermin and contrive some effectual remedy of guarding the country from these savages which in my opinion resemble so much the plagues of Egypt that I sometimes think they are sent us for our sins.

But this, sir, is not what I intended particularly to write you about; although it is a very important matter for our speedy improvement for you to write as much and as long as you please. Still it will be all to no purpose, if these vermin pay their usual visits and eat up the grass and corn by the roots.

But the principal thing I wish to mention is the introduction of oatmeal in this part of the province and the likely advantage we are to secure from it. I had a great prejudice against it at first and must acknowledge it was not very palatable. I tasted it first in Truro as bread and although I did not like it, it was far from disagreeable. I thought of it then rather as a curiosity than to be any good to the country. When I went back to Truro three weeks afterwards I sought after a piece of these Scotch cakes and on making a second trial I disliked them much less than at the first; and it then struck me that I should have myself a few bushels of my oats converted into such meal. I carried the resolution into effect before another eight days, and had it home to my family. From the novelty of the thing the children began eating it in bread but after a second trial neither threats nor entreaties could induce them to touch it. Through persuasion, however, my wife always used it when at table; I myself became fond of it, and thought it more nourishing than our flour bread. We were in the States for nearly a month when one day a neighbor called at the house and the conversation turned on oatmeal. He preferred it, he said, made in porridge and taken with milk. We tried it that evening in this way for the children; they seemed to relish it and ever since have continued fond of it. By degrees they began again to taste the cakes; and at this time oatmeal is now our staff of life, and is coming very fast in use throughout the whole district of Colchester. Although your writings had done no further good to this country than bringing us to an acquaintance with this very useful and economical method of employing our oats, your time would have been well spent, for any farmer can make himself independent in point of bread with half the work by turning his attention to the culture of oats. Plump, well filled grain of this kind is, I think, as two to one when compared to wheat, and as the latter is worth on an average ten shillings, good oats are now worth five shillings in real value, and besides they are a sure crop, not subject to as many accidents, can be raised on almost any kind of land and well fitted to the soil and climate of this province. But sir, as oats only brought three shillings to three and sixpence per bushel the additional value given them by converting them into wholesome meal is to be ascribed to your labors; and could we succeed in getting the proper mills erected (which I hope to see general in a very few years) we would get on very fast in improvement. I never believed till now that this province could raise its own bread, but I am convinced that nothing is more easy, and I for one shall this year sow double the quantity of oats ever before raised on my farm. The potato oats are preferable for mealing, and I would recommend to all such as mean to cultivate this grain to obtain such seed if they can. Four bushels of these will produce 1 cwt. of meal, whereas five or five and a half are necessary of our common oats.

Wishing you all success, I am,

Your very humble servant,

J. ARCHIBALD.

Colchester, March 12, 1819.

Agricola's remarks on Mr. Oxley's letter seem to me worth copying. It gives us an idea of the low estimate held by many persons—residents of the province—of the agricultural capabilities of Nova Scotia. He says: "This letter may be called a brief statistical account of Cumberland and must be highly interesting to the whole province. It is written to do away with the impression of any natural incapability, either in the soil or climate for the production of white crops, and I rejoice that the opinion which I broached in a very early stage of my course seems to be daily gaining strength and confirmation. So indignant are my correspondents at some late attempts to revive the old exploded doctrine that in three of my letters this week allusions are made to the subject and I have even an assurance from the secretary of one of the county societies that at their first meeting a solemn appeal will be entered against it in the name of the whole body, and that a public instrument will be sent me to signify their united conviction 'that Nova Scotia—so long degraded and abused—is abundantly capable of perfecting all kinds of bread corn.' If white and green crops come to perfection in the Cobequid mountains, the valleys and plains under proper management and barring the usual chances incidental to all countries must yield a forward and certain harvest. I again assert that I fear no contradiction that there is no country within our territorial boundary where wheat, rye, barley and oats will not in nineteen seasons out of twenty ripen and perfect their seeds and I feel obliged to Mr. Oxley, the vice president of the Cumberland Society, for coming thus boldly forward and giving his sentiments and name to the public. In truth, all the assertions that have lately been made, all the associations that have been formed, the unexampled spirit and liberality of the capital in this great cause are the vain and idle dreams of enthusiasts, if nature has doomed the country to pasturage and cursed with sterility. The provincial society now in operation and which embraces whatever is distinguished for rank, talent and respectability will soon put this question to the test of experiment; and if their patriotism be backed by a corresponding zeal in the legislature this province will assume a proud and independent attitude and plant her glory on the pedestal of the plough. There is public virtue in the very trial and every good man will bewail as a calamity the miscarriage of their plans."

Ploughing matches were introduced at this time in Nova Scotia and a report from Truro to Mr. Young written by E. M. Blanchard tells how things were conducted at such gatherings in 1819, nearly a century ago.

"I have to inform you that in our society three ploughing matches have lately taken place, one to each township, and these were appointed by the committee. The competitors were to be young men thirty years of age and natives of the province. The first was in Truro, the 23rd ult., and attended by a great number of people. Six ploughs drawn by horses were engaged and the performance was fully equal to anything that might be expected. The highest prize was allotted to Alexander, son of James Archibald, about nineteen years of age; the second to John Gerney, 21 years of age, and the third to James Talbot."

The next was in Onslow the week following and was numerously attended and the work well performed. David Crow, John Bishop and Richard Carter were the prize winners at Onslow. At Londonderry, the other township, Mr. Blanchard was not present, but of the others he says: "I was present and am happy to say that a spirit of emulation and good humor prevailed in all descriptions of persons assembled. and the novelty of the spectacle added to its acknowledged usefulness and was a source of satisfaction."

In commenting on this letter and others received on the same subject, Mr. Young says: "With heartfelt pleasure have I given these two letters to the public, the one from Pictou, the other from Truro as marking a new era and symptomatic of a new feeling. I am happy also to announce that the Cumberland society is making preparation for three matches in different parts of the county—at Amherst, River Philip and at Ramshag. These are favorable specimens of enterprise in the eastern part of the province but what has become of the western.........I have looked with impatience to Windsor, to Horton, to Cornwallis, to Annapolis, to Londonderry, and I wish not to look in vain."

"There is one painful circumstance in the matches this day recorded," Mr. Young goes on to say, "the exclusion of British ploughmen from contending with our own. It is the public acknowledgment of inferiority and I call on Acadia to wipe away the stain. This humiliating distinction must be blotted from the annals of our agriculture and our young men must not rest contented till they can strive, and that successfully with the ploughmen of any country."

I shall close this chapter by quoting almost in full one of Mr. Young's three letters on lime:

"In the year 1806 I was one afternoon leaning over the grave of Burns reading the plain inscription on his tombstone erected in the churchyard of Dumfries. This town was for a time the home of the Scottish Bard and here terminated his follies, the last breathings of his muse, and his life. I was indulging in one of those moods in which pain and pleasure are so equally blended that the mind is thrown into a sort of delightful melancholy, when I was forced by present objects to check the rising emotions and combine them with grief. His enchanting and splendid verses were contrasted with the dark shades of his character; the strength and manly independence of intellect, with inconstant waverings of his moral perception; the bright and promising morning of his life, with the black cloud that settled on the evening of his days. I was riveted to the spot; tears filled my eyes; my whole soul was absorbed in contemplation. It was a moment of rich enjoyment. A slow and faltering step struck my ear, and turning round I discovered an emaciated but venerable figure approaching the last decrepitude of old age. 'Stranger,' said he 'you are paying the tribute of respect to our poet, and I must beg pardon for this abrupt intrusion.' There was such an air of good nature in the old man, heightened by the sense of helplessness, that I addressed him frankly in reply, and showed no reluctance to engage in conversation.

He sketched to me with all the loquacity characteristic of his years, the habits, the faults of the poet, while at the same time he appeared an ardent admirer of the faithful coloring, the playful wit, the winning sprightliness of the writer. 'Come,' said he, 'along with me to the hillock where Burns alternately brutified his senses or exalted them by the varied inspirations of his lyre.' I accompanied him and we ascended together the mound of earth on the top of which is the seat—once the favorite haunt of this immortal and extraordinary genius. It is still shown to the curious; it lies within the precincts of the town, and commands a fine prospect of the surrounding country. We seated ourselves on the grassy turf, and grown familiar by interchange of sentiment, we conversed on the most intimate footing. From Burns we soon passed to other topics possessing novelty or interest. 'The country, ' said I, 'in every direction around and wherever I have travelled is mostly arable and highly cultivated. The red and white wheats prevail universally, and are sown seemingly by the farmers in equal quantities.' 'Yes,' said the old man, 'there is a wonderful change in this district since I was of your age; for I can recollect when there was neither enclosures nor wheat in all this country.' 'Is it possible,' I answered, 'that all these improvements are of so recent date as to be within your memory? I should like it if you would relate to me the ancient state of the country, the condition of the tenants and the progress of agriculture.' 'That I shall do with all my heart,' rejoined my acquaintance, his eyes brightening as he spoke, for like myself he seemed fond of the subject.

'I was born,' continued he, 'in Lochmaben in 1719, and am now eighty-seven years old. The oldest thing I recollect is the great riot which took place throughout the whole of this shire in 1724, in consequence of the landed proprietors beginning to enclose their estates on purpose to stock them with black cattle. The small tenants were turned out to make way for the improvement; and the ground was fenced by a sunken ditch and wall called then park dikes. Great distress was felt in the country on account of the alterations, and the tenants rose in a mob and with pitch forks, spades and mattocks proceeded to level all those enclosures from the one end of the county to the other. My father was unfortunately concerned in that disturbance and after it was quelled by the help of two troops of dragoons from Edinburgh, he was banished to the American plantations for his crime. I was brought up by my uncle who rented a small farm of about one hundred acres in a village about twenty miles hence, and I assisted him in working it. The general produce of all this country was gray oats, although the gentlemen on their croft raised also a little "bear" or "bigg," and some white oats. Yet the soil was believed by all men incapable of producing wheat, and accordingly it was never tried. Our common food consisted of gray oats parched or burned out of the ear, and ground in a hollow stone by hand; of milk; of goats, with never more than one ewe killed at Martinmas for the family. The houses were generally built of mud and covered with thatch and the clothing was of plaiding, a coarse, twilled stuff manufactured at home from the black and white wool mixed together. Hats and shoes were worn only by the gentry, and even they often appeared at church with coats of their wives' making.

Potatoes were not introduced till 1725, and at first were cultivated with much care and in small patches. They were carried to the great towns on horses' backs and were retailed at a high price by pounds and ounces. It was about the year 1735, when they came into common use and before that period there was often great scarcity of food, sometimes bordering on famine in this fine country which was then accounted incapable of raising bread for its scanty population. The town of Dumfries at present contains more inhabitants than was then in the whole county, and twenty acres are more productive than two hundred in those days. Such was the low state of husbandry that the principal supply came from Cumberland on the other side of the Esk; and I myself have witnessed on the Wednesdays which, from time immemorial, have been our market days, sad scenes of real distress occasioned by the swelling of the river which prevented the carriers from bringing forward the meal, as the want of bridges often interrupted all communication.'

'I have seen,' proceeded the old man with animation, and pointing with the staff in his hand, 'all that country before us covered and overgrown with whins and broom, and not a single vestage of these hedges and stone walls which cross and intersect the whole landscape. A few sheep and black cattle picked the scanty herbage, and they were prevented from eating the growing corn either by a herdboy, who tended them, or by a temporary fence erected every year.

'The common people very often collected nettles in the field of which they made a kind of coarse soup thickened with meal, and enriched on great days by a piece of butter as a luxury. The state of Scotland from 1719 to 1745 was miserable in the extreme. The lower classes were ill-fed, ill-clothed and ill-lodged, and there was no revival in their circumstances till the introduction of potatoes and lime.

'Of potatoes and lime,' repeated I. 'I can perceive some reason why the first should improve their condition, but what connection had the last with it?' 'Lime,' continued my instructor, 'operated with more success on the prosperity of the country than potatoes, and I look upon it as the best friend we ever saw.'

'Explain yourself,' said I, 'for all this seems mysterious, and I cannot conceive how lime could have wrought such enchantment.'

'To your satisfaction, then, I shall account for it; and my present views have not been altered for the last twenty years of my life. Seventy years ago, in 1738, there was no lime used for building in Dumfries except a little made of cockle shells burned at Colvend and brought on horses' backs, a distance of twenty-two miles. All the houses were either composed of mud walls strengthened by upright posts, and these bound and connected together by wattled twigs; or they were built of stone laid, not in mortar, but in clay or moist loam.

'The whole town was a collection of dirty, mean and frail hovels, never exceeding one story, because the materials had not strength or firmness to bear more. These buildings were so perishable and stood in need of such constant propping that people never thought of spending time, labor and money on the comforts of a habitation which was to fall into ruin during the course of their life time. Old Provost Bell's house, which was founded in 1740, is the only one remaining of the ancient town, and although the under story was built with clay, the two upper were laid in lime, which is the cause of its long standing. Between the years 1750 and 1760 the old mud walls gave place to those of stone laid in mortar and from that period there has been a rapid and visible improvement. Houses acquired permanence, descended from father to son, and the labors of one generation were enjoyed by the next. To lime, then, we owe these stately edifices with all the comforts and conveniences they confer; and it hence contributed in a remarkable degree to the refinement and polish of private life.'

'If to this fossil,' continued the old man, 'we are indebted for the stability of our towns, we are under greater obligations for its unprecedented effects on the power of the earth. Wheat and clover would not thrive in this county of Dumfries, nor in the Stewartry of Kirkudbright until lime was plentifully incorporated with the soil. After its introduction the farmers became rich; their lands advanced in value, the produce was multiplied ten fold, the population increased and these counties suddenly rose to their present unexampled prosperity.

In my younger days it cost much toil to raise on my uncle's farm from two to two and a half "bolls" of gray oats per acre, and after taking one or two crops the ground lay bare for four or five years in natural grass, which was coarse and unpalatable to the cattle. The rent, only two shillings and six pence per acre, we found great difficulty in scraping together, and we fell on a thousand shifts to accomplish it. Now the same farm is rented at three pounds ten shillings per acre, is kept under constant cropping, rears excellent wheat, is wholly drained and enclosed, supports a genteel family in all the comforts of life, and one year's rent of it double the sum which could have purchased it altogether sixty-five years ago. It is lime that has warmed and meliorated the soil, that has endowed it with productive powers and that supports all the plenty and prosperity you have been admiring as you have travelled through the district.'

He paused. I looked in his face, and a glow of animation had overspread the paleness of age. His right hand was extended in an impressive posture, and his left rested upon his staff. The pencil of Titian could not have done him half justice. I rose and bowed, we came down together and I returned to my apartments in the inn to note down the particulars of this interesting story.

In this province (Nova Scotia) we have fortunately an immense abundance of lime, although hitherto it has been much neglected and scarcely applied to use. The benefits of mixing it with the soil seem not to have struck our farmers with the force that the importance of the subject merits; and the few trials that have been made have been conducted with so little skill, and have fallen so much short of expectation, that the value of the inestimable fossil has not heen sufficiently proved. The cheapness of land, the decided preference in favor of the grazing system, the easy and independent circumstances within the reach of moderate industry, the natural productiveness of a new country have all operated in repressing the elastic spring of vigorous and spirited exertion. The toil and expense of burning and carting lime to the extent of one hundred and fifty bushels to an English acre, would have been viewed as a herculean task by men who had encountered the hardships of cutting down the forest to procure subsistence.

There was, moreover, in the early settlement of the country less necessity for the application of this beneficial manure. The exuberance of vegetable matter incorporated with the soil, which had been accumulating for past ages by the annual decay of leaves and plants, yielded liberal returns under the most careless cultivation.

The marshes and intervals and at times the deep loamy uplands were put under the most rigorous and unsparing system of exaction, and crop after crop succeeded each other, till the original richness of the soil was drained. When it refused to pay back the seed and labor, it was abandoned to natural herbage, and allowed to regain its strength by the healing process of nature. Weeds and grasses sprang up indiscriminately and contended on equal terms for the mastery of the soil. There are at present large tracts which the occupiers are afraid to break up, because the weeds would instantly start into life and choke whatever grain would be intrusted to the earth. New lands in such circumstances have been sought after to furnish bread corn, or the more ruinous expedient has been resorted to of importing it. We are now happily ripe for a change. The agricultural classes are beginning to study their profession with keenness and enthusiasm. New and more liberal ideas are gaining the ascendancy. A spirit of enterprise has gone forth; the noble, the wealthy, the wise are striving with each other to raise our prostrate and fallen agriculture to some sort of eminence, and a few years of such promise will alter the complexion of our affairs.

It is inconceivable what effect lime has on the productiveness of the earth. Philosophers have investigated its nature and properties to find out the secret spell by which it works, and while some have attributed its effect to its power of decomposing perishable matter, or to its affinity for carbonic acid, others have ascribed its power to the change effected on the constitution of the soil. All, however, are agreed that no land, after its first and natural richness has been exhausted by cropping, can continue fertile without a mixture of this fossil. Its use was the first thing that revived English agriculture, after it had long languished in the most abject state, and it was the first thing, too, that raised Scotland to independence.

Lime as a manure has found its way into France and Germany, and it is blended with the soil along the shores of the Baltic. In southern latitudes this mineral is more generally applied either incorporated with clay in the shape of marl, or combined with sulphuric acid in that of gypsum.
This whole province seems to rest on calcareous formations, and limestone and plaster rock protrude everywhere on the surface. Nature has thus secured her perpetual fertility by dispensing in such exhaustless profusion the fossil manures. The only difference between these two substances is in their chemical combination, for the base of both is the same, limestone being a carbonate and plaster a sulphate of lime. The last of these is regularly exported to the United States as an indispensible dressing, and is there found to quicken and invigorate the principle of vegetation. Here it is neglected, except as an article of commerce and it is generally reputed to be totally useless on our lands. Of all this am I not only doubtful, but incredulous, and I wish that some experiments were instituted to set the question at rest; for without the testimony of stubborn and well attested facts no man can believe that the substance which fertilizes in Maryland and New York, and now in Massachusetts will be inoperative in Nova Scotia. I am aware that climate exercises over the vegetable kingdom a mighty and imperious dominion, and the effects of gypsum here may be less striking and perhaps less profitable; but that it is altogether inefficient is so incompatable with the known principles of order and uniformity which prevail throughout the laws of matter, that everyone has a right to suspend judgment till the foundation of this opinion be given to the public.

But waiving the questionable point in the meantime, there can be no doubt about the utility of lime. In all northern climates it has produced wonderful benefits, and has been tried here lately with success and with sufficient liberality to justify its general introduction. I recommend it warmly to the friends of agriculture and I hope this introduction will not be lost. It is beginning to attract pretty general attention and has been searched for with care in several parts of the province. Preparations are now being made for a fair and full experiment in the spring.

From my own observations and from the notices of my correspondents I find that it is met with in most of the townships, not in detached rocks, but very often in wide spreading and extensive masses, and where it has not been discovered, as in the county of Annapolis, this, I trust, has been rather owing to a want of diligence in the search than to the unkindly parsimony of nature. The society in operation there would do well to direct their first efforts and bestow their first premiums in this line of inquiry. It is singular that throughout that vast county neither limestone, gypsum, chalk nor marl have been detected, although these substances abound in similar situations, and in fact are strewed around with the most careless prodigality. Limestone has been found in the eastern division of the province, in the middle and northern districts, and also in those of the west. In Sydney it is met with as a common article, and is frequently scattered on the soil. It abounds in Pictou Island, although the quality is very inferior, on the east and west river flowing into the harbor and also along the seashore. In Stewiacke it exists abundantly, although the farmers till of late in that settlement were ignorant of the fact, and were in the practice of bringing from a distance what was needed for the purposes of building. In Musquodoboit the one side of the river is an unbroken chain of lime rock of the finest and purest quality. It is so accessible itself and so near to the forest that it can be burned for a small expense, not exceeding four pence per bushel. From this point traversing the province northward we encounter it again in the rivers of Colchester, and in the North Mountains at Onslow. It meets us at the River Philip, at Amherst, at Nappan and Maccan, in Cumberland, and no doubt in several other places which I cannot particularize.

It is found along the whole course of the Shubenacadie, and towards its mouth on the eastern bank is one solid mass of lime. Across the river about half a mile below Fort Ellis, it meets our eye in Douglas, and extends along the left bank in detached blocks to the sea. Travelling southward we discovered it constituting the bed of the Nine Mile river, and from thence running back till it terminated in Windsor in great abundance, and vast variety. These, although numerous, are far from being the only places where this fossil is to be procured.

Lime is found in extremely different qualities and in proportion as science comes to enlighten our practice, we will turn our attention to the character of the rock from which this fossil is taken. Pure limestone consists of nine parts of carbonic acid and eleven of calcareous earth, and of course in the process of burning, which is employed solely to expel the acid by the action of the heat, it will lose nine-twentieths of its specific weight as drawn from the kiln. Shells of first quality will require more than their own weight of water to slake them, and every one bushel when reduced to powder will measure three. When the lime is intermixed with sand, flint or clay, its loss in calcination will be less, the shells will yield a smaller proportion of powder, and what is still more curious will require a less quantity of water. As there are great inequalities in the mixture of these foreign ingredients, so the amount of powder they produce, and the quantity of water used in slaking, may be employed as certain measures of the value of the limestone. The color to a certain extent, also ascertains the purity, but this cannot be relied on as infallible, as there may be a portion of magnesia in combination, which on account of equal whiteness cannot be discerned by the eye. It is plain that when our different rocks come to be wrought, these tests will be of infinite advantage, and will point out to the farmer and mason, those which yield the most calcareous earth—the substance which both of them are in quest of for the purposes of their respective arts.

To the farmer it is an object to cart the lime when fresh from the kiln. By exposure to the atmosphere this earth attracts carbonic acid, and returns to its original weight, usually in the proportion of a twentieth part on each of the first five or six days; if spread out to the air it recovers itself much more rapidly. While it is light of carriage it should be transported to the soil with which it is intended to be mixed, instantly slaked, and then scattered and harrowed on the surface. Delay here is of pernicious tendency if inert vegetable matter is to be acted on, as the causticity of the lime is most active in its simple state before its affinity has been exerted on the carbonic acid of the atmosphere. If the application is meant to improve the earthy texture of the soil, or to supply calcareous matter to the vegetable organization, there is no necessity for such haste, as this fossil considered as a carbonate is of infinite value to the farmer, and, moreover, is supposed by some inquirers to be peculiarly useful in this latter case. Directions are even given in Davy's Agricultural Chemistry against using it in soils rich in putrescent manures, because it lessens the solubility of those compound products that go directly to the nutrition of the plant.

"AGRICOLA."

Halifax, January 17th, 1819.

CHAPTER 2.

I think it would not be difficult to show that the twenty-five years from the date of Agricola's letters to 1845 were the most prosperous years in Nova Scotia agriculture. The same likewise may be said of the advance in farming in New Brunswick and Prince Edward Island. During most of these years there was a steady flow of immigration with no emigration from the country. The exodus, about which so much has been written during the last quarter of a century, had not yet begun. The central society of Halifax, which after a few years evolved into a Board of Agriculture for the whole province, at once set to work to hold yearly exhibitions and encouraged the local societies to do the same. The central society as well as the county organization, sought to distribute the most improved stock and seed. Those who most interested themselves in this work were the leading men in the several districts and consisted of members of Parliament, lawyers and teachers, besides the principal farmers, and all vied with each other in encouraging and supporting the agricultural revival.

With this state of feeling abroad, if the soil and climate of the province proved as favorable as Agricola claimed, there could be no doubt but the advance would be rapid and permanent, and this was what took place. Mr. Young, in writing on this phase of the question in 1822, says: " In the history of no country has there ever been recorded a more rapid and instantaneous change than has been witnessed in Nova Scotia. Improvement has proceeded with such gigantic strides that already the point is out of sight from which we started and although the whole has been effected in little more than three years, it is with difficulty than we can bring ourselves to the belief that provincial husbandry was in such a state of barbarism at the commencement of the period." "In some articles of produce," he goes on to say, "such as potatoes and turnips, we have outstripped the demand and produced a repletion in the market. In others, as oats and barley, we have raised enough for home consumption but we are still greatly deficient in wheat." It is true after the first four years the advance made was more gradual but there was still progress, and the ambition of the farmers' sons was to own farms of their own as quickly as this could be accomplished.

After 1845 there came a great change in the economic conditions on the farm brought about largely by the failure of the potato crop in that year and the loss of the wheat crop a few years later. The hard times caused by the loss of these crops led numbers of young men raised on the farm to try their fortunes in other lands. This was the beginning of the exodus that has been going on ever since. The discovery of gold in California in 1848 and the opening of the American west about the same time added to this emigration, the effects of which have greatly retarded the growth of the eastern provinces of Canada. In addition to those that left the country whose labor was lost to agriculture the bright young men who remained were in not a few instances drafted from the farm as telegraph operators, civil engineers, clerks, railway employes and government officials, most of which positions may be said to have been created in this country since 1845. Thus a state of things gradually came about in which the "son of the soil" no longer sighed for the time when he would be the possessor of a farm of his own; but on the contrary his ambition was fired to prepare himself for some one of the many places now opening to the young men capable of filling them. This condition of things, it must be borne in mind, was not peculiar to Nova Scotia or New Brunswick but extended to the whole eastern side of this continent. It may have been felt more keenly in these provinces from the fact that shipbuilding, mining, lumbering and fishing were attracting the attention of capitalists and were rivals for the labor and thought of the boys brought up on the farm.

Two letters written last winter—Nova Scotia's record breaking year for low temperature and scarcity of fodder—tell something of the hard experiences of the year 1849. Copies of these are found below:

"Numbers of persons are talking about this January of 1905 as a very hard month, and that no work, nothing to do, very hard times, never saw the like and so forth. I thought of saying something with respect to the years 1848-9. The writer in the spring of '48 was living on the old homestead at Westbrook with his father and mother, his blind brother and sickly sister, his grandmother Jenks and a maiden aunt, and was doing nicely on the farm. In that spring he sowed six bushels of wheat and raised 4½ bushels, the weavel destroying it. He planted 3 acres of potatoes and dug 115 bushels; the potato blight was then raging and destroyed them. He sowed 2 acres of buckwheat and the frost killed it. Instead of having 25 or 30 tons of hay as usual, the drought injured it so there was 15 tons and the farmers far and near suffered accordingly. The farmers therefore had but little to help others. At this time in what was then called Mill Village there was but one vessel on the stocks known as Thomas Curley and Edward Fitzgerald and she was never finished—no work for laboring men.

Daniel Yorke then had a store in the old house standing at that time where the house stands belonging to J. C. Holmes and where he now lives. He used one end of the house for flour, etc., in the other end his family lived. He sold the flour for $10 and $11 per barrel, but that soon departed. Patrick Blake had his store somewhere near the place where Mr. Sears keeps his play house. He soon sold his flour and went and procured a small quantity. The bay was full of ice and no way of getting it here except hauling it from Amherst so Mr. Blake sold it at $14 per barrel. Some of it when made into bread, and although bread was good, it was very dark, not quite so dark as the stove pipe but very nearly. I think it was a mixture of wheat, buckwheat, peas, beans, nettle and other seeds, and where the writer boarded, at last there was nothing but dry corn cake without tea, milk, sugar, molasses or butter. Then he left where he got plenty of oat cake of the best kind. The question now arose about the first of January, 1849: What shall be done? People must not starve. So a council was called comprising Rev. W. B. King, Jacob DeWolfe, Vickery Davison, T. S. Dickson, James Kirkpatrick, of Kirk's Hill, E. D. W. Ratchford. There may have been some others but I am not certain. They agreed to write and did write to Harvey King, of Windsor, to send a certain sum of money to them for which they would be accountable if they could not get it from the government. Postage from Parrsboro to Amherst, 9 pence, to Halifax 1 shilling and 6 pence and to Windsor 9 pence, making in all three shillings for the one letter.

For that amount of money we can send 37 letters and one newspaper all over Canada and the United States. So the letter went and your humble servant at this time was mail carrier between Parrsboro and Amherst once a week, on Saturday leaving Partridge Island at 10.30 a. m., arriving at Amherst generally about 4 p. m. Sunday and arriving at Parrsboro 10 p. m. Not being as well acquainted with the people on the route as now everyone expected money. When he came to Lakeland he took off his bells and drove in without them and every one came to Parrsboro the next morning to see if the letter came. No money nor letter. The next mail day he took with him what they called a blunder-bus or horse pistol which he showed to a good many. On Monday morning again there was a letter from Mr. King saying he could not spare any money. Those persons first named then petitioned the local government for aid for the poor at Parrsboro and vicinity. The result was they sent to Amherst, a certain amount of money to D. W. Douglas there to let the people of Parrsboro have so many barrels of corn meal which was hauled to Parrsboro (twenty barrels) which were hauled by William Kirkpatrick, now living in the town of Parrsboro, one of the oldest persons in town. D. Y. Holmes being 91 still lives, and the late Dow D. Roop. Who is there here now who can say hard times? Potatoes at Cornwallis at that time were $1 per bushel and scarce at that.

(Parrsboro Leader.)

Stewiacke, March 22nd, 1905.—The year 1849 and the spring of 1850 were memorable years for short crops and hay famine, but it is not to be compared with the hay famine of 1905. In 1850 there was more feed went out of this valley of Stewiacke than was brought into it. The farmers did not know anything about getting money from the Banks, but had to dispose of stock as much as possible, and then to do the next best thing. It might be well this spring of 1905 for some who find themselves hard pressed, to imitate one of those years. William Reynolds, who went heavily in debt for a large farm a few years before, known as the Bentley farm, towards the last of March, saw his hay was nearly all gone, he started up to John Bentley, who was his brother-in-law, and succeeded in getting a permit to fell timber to browse his cattle on till spring. About the first week in April William started for the mountain with 25 head of cattle, composed of oxen, steers and heifers, and 500 lbs. of hay. He arrived and got his cattle all safely housed in Mr. Bentley's barn. Early in the morning Mr. Reynolds commenced chopping down the trees for his cattle and with a little coaxing soon induced them to eat browse, had them housed at night and on stormy days. Mr. Reynolds being a staunch Presbyterian always managed to get enough timber felled on Saturday to do over Sabbath. It was said when the cattle heard the axe going in the woods they would bellow the same as the cattle do when they hear the root cutter going in the barn. The first week in May those cattle were turned out to shift for themselves. Only two died from injury received and the rest came home in the fall slick and fat. An old farmer remarked last fall that he had never seen a better crop of buds on the trees, and that we might look for a hard winter. The shortage of hay this spring is something serious, but we have reason to be thankful that there is still corn in Egypt, and more to arrive.

Speaking of the failure of the wheat crop a writer in 1847 says: "This question of the wide failure of the wheat crop throughout North America and the consequent gradual retrocession of the wheat exportation to the prairies of the Great Western Lakes and to the Western territories of the United States is important enough to merit a more lengthened discussion than I should be justified in introducing here. There is one phase of the question, however, which is important briefly to consider. My . illustration is taken from the provinces of Lower Canada. In this province from 1831 to 1844 the growth of oats increased from three million to seven million bushels while that of wheat diminished from three million four hundred thousand bushels to nine hundred thousand. In the same period buckwheat and barley increased to three times their former growth." "How much agricultural distress," this writer goes on to say, "how much disappointment and loss of crops, how many disheartened men and starving families; how many mortgage sales and transfers of property must have preceded and accompanied so entire an alteration in the general direction of Agricultural industry, and the kind of produce the growers were able to send into the market. Writing again of the wheat and potato crop he says: "The severity of these blights it is hoped in a great measure has been allayed and the produce of the potato crop this year (1847) in New Brunswick seems to hold out the promise of a well founded renewal of that confidence in this root which has hitherto formed the basis of many of the farmers' plans and calculations."

After 1849 the farm conditions began steadily to improve. The land that for several years had been lost in wheat, was sown with other grains and new varieties of potatoes were found that suffered less from the blight. Flour from the west found its way into the province as return cargoes in schooners trading with Boston. In the fifties the reciprocity treaty with the United States gave trade a boom and wherever there were farm products to sell good prices were obtained for them.

In the sixties the war of secession sent the Americans over here for all the supplies the provinces could spare and times continued good until the close of the war and the repeal of the reciprocity treaty. By this time the industry had to some extent recovered from the blow it received in the forties. It had improved at least this much, that the farmer by industry and economy could keep the wolf from the door. At the same time there had developed in the young a very strong belief that less hard labor would bring better results in some other business. This feeling was shared to a considerable measure by the parents also, and this state of feeling brought the educational question to the front. When men began to think of trade and manufactures they began to study and learn business methods and naturally they began to ask if farming was conducted as it might, or ought to be to succeed. They read about scientific agriculture, bookkeeping in connection with farming and co-operation, and wanted to know what all this meant. All of this led to better educational facilities being required and opened up the educational difficulty treated in another chapter.

The first cheese factory in Nova Scotia was erected at Paradise, Annapolis County, in the year 1870. The second one was established in Onslow in 1871. The Onslow factory was opened June 5th of that year, with 900 pounds of milk and was later turned into a condensed milk factory and is still in operation, working up in the height of the season as much as twenty tons of milk per day. Nova Scotia condensed milk is found in most of the markets in the world. Several factories were built in the years following but the price of cheese drooped so low in the late seventies, that farmers concluded they could get more out of their milk at home, and co-operative dairying received a set-back from which it has scarcely yet recovered.

Cheese was not the only farm product that fell to a very low figure. Beef and pork were a drug in the market as well, and things looked bad enough for the farmers. The light ahead at this crisis was the English market. The experiment of shipping live cattle to Great Britain was being tested and if it succeeded, a good market in the future for this product of the farm was fairly certain. It was not that the Maritime provinces were producing large quantities of beef in excess of that required for home consumption, but western Canada was supplying our market, thus displacing home grown beef. The same thing was going on in the cheese market also.

Since the initial difficulties have been overcome in the shipment of live stock to the British Isles, and the west finds a good market there for its surplus, the price of beef in our home market has reached a point that now will justify farmers more generally going into the production of beef to supply the home demand. Twenty years passed, however, while this state of things was being reached and during these years, on many farms the selling of hay came to be the principal source of income.

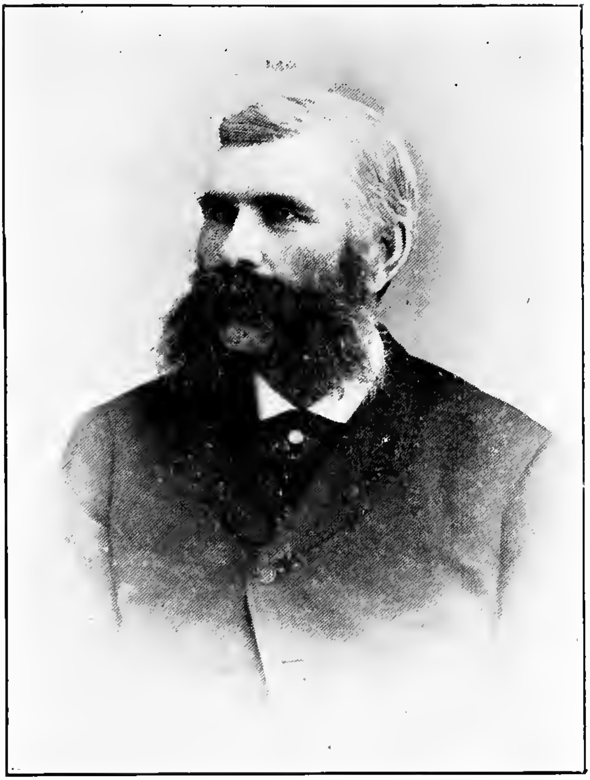
The demand of the farmers for a better education on the lines of their own business was responded to in 1886. That year a graduate of Cornell University, H. H. Smith, was appointed to a position in the Normal School at Truro to give instructions in the first principles of agriculture to students intending to become teachers in the common schools. In addition to his class of Normal students Prof. Smith made arrangements to teach those from any part of the province who might wish to take a short course in agriculture. This school was in operation for a number of years and was finally taken over by the Agricultural College opened in 1904. A number of young men graduates of this school are now doing good work for the advancement of agriculture. Among the number is F. L. Fuller, the successful manager of the Nova Scotia experimental farm at Truro. Nova Scotia's next forward movement was to buy a farm at Truro to be used as a kind of experimental station in connection with the class at the Normal School. Next came the Horticultural School located in the Annapolis Valley as a means of education to the fruit industry of the province. The Horticultural School was started in Nova Scotia about 1900. It is now, however, amalgamated with the Agricultural College at Truro. Prof. Sears, who was principal of the Horticultural School at Wolfville, has charge of that department at Truro, and the work is progressing most favorably under his direction.

In 1902 negotiations were begun between the Governments of the three Eastern provinces with the view of establishing a joint institution for the Maritime Provinces to be called the Maritime Agricultural College. The wisdom of the combined executives failed, however, to formulate a scheme satisfactory to all the provinces interested, and the idea was abandoned, leaving Nova Scotia to go on alone. This she did, after some delay, and the Nova Scotia Agricultural College, a fine brick building fitted up with all the modern appliances for teaching, located at Bible Hill, Truro, was opened under very favorable auspices in the month of January, 1905.

In 1818 Hon. John Young first began his efforts in the interest of farming, and a better education for farmers in Nova Scotia. The enthusiasm awakened at that time never quite died out. There were times when the sky was very dark, when capital was being invested in almost every business except that of farming, when young men were leaving the farms never to return. But in all these years there were men still who had confidence in the land, and now, nearly a century after Mr. Young's bugle call, a college is in full operation in Nova Scotia dedicated to the work of instructing farmers and farmers' sons in the science and practice of scientific agriculture and all that that includes.

Next to Hon. Mr. Young, perhaps few men have done more to advance the industry in Nova Scotia than Col. Wm. Blair. As a practical farmer, in the legislative halls of his country, as manager of the Experimental Farm at Nappan, N. S., his one aim was to pursue a course that would benefit the farmers of his native province. He was the first to start the milk business between Truro and Halifax, and was always ready to assist in improving the live stock of the province. While in the legislature he was instrumental in getting an act drafted and passed entitled an "Act for the Encouragement of Underdraining in Nova Scotia," and for the last twenty years, at institute meetings, farmers' picnics, and all meetings in Nova Scotia convened for the purpose of discussing farm subjects, if Col. Blair's name was not on the programme there would be evident disappointment.

In the Annapolis Valley, the great fruit growing district in the province, there have always been advanced men to stand for progress. In the old days there were such enthusiasts as Col. John Burbridge and Charles R. Prescott, and now as their successors there are the Starrs and the Eatons and a host of others whose single orchards yield nearly as many barrels of apples as all Nova Scotia produced for export thirty years ago.



COL. WILLIAM BLAIR, TRURO, N. S.

CHAPTER III.

NEW BRUNSWICK.

The first agricultural society founded in New Brunswick was organized in the city of St. John under the patronage of Governor Carleton in the year 1790. From references in various publications to the work attempted and accomplished by this society, one is led to conclude that it must have been composed of men ready to lead or second any effort to advance the agricultural interests of the province.

In 1819 a society was formed in Charlotte County, known as the Charlotte Agricultural Society. This society is still in good working order, and is, no doubt, the oldest institution of its kind in the province.

During the speakership of the Hon. Henry Peters a society was formed in Fredericton, called the "Central Society for promoting the Rural Economy of the Province." In the same town another society was organized in 1825, called the "Agricultural and Emigrant Society." (The local societies that were organized from this date were incorporated as "Agricultural and Emigrant" societies until recently.) This last society took the place of the original institution, and to it the funds were handed over. In 1826 and the following year the sum of seven hundred pounds was granted to this society by the government, and there is every reason to believe that this money was used to pay for the pure bred stock imported into New Brunswick at that time. This makes New Brunswick the first province of Canada to import pure bred cattle from Great Britain. Some of the bulls found their way to the Westmorland marshes and helped to lay the foundation of the fine stock that was common there fifty years ago. All of the animals were registered in the first volume of the English Herd Book.

What was said of agriculture in Nova Scotia in the period between 1840 and 1845 is equally true of New Brunswick. Farming was profitable; the virgin soil yielded abundant crops; new land was yearly being brought into cultivation; farmers had confidence in the business and were prosperous and contented. At the close of this period there came a change, brought about by various causes, and this was followed by economic developments that not only effected the relative standing of agriculture and other pursuits, but reduced to so large an extent the profits of the farmer that comparatively few young men were willing to embark in a business that promises such poor returns.

In the fall of 1849, when affairs were in this unsatisfactory condition, the agricultural society of the State of New York, invited James F. W. Johnston, F. R. S., of Great Britain, to deliver a course of lectures at Albany upon the "Connection of Chemical and Geological Science with the Cultivation of the Soil." These lectures were delivered during the sitting of the state legislature and were listened to by crowded audiences. The northern states of the Republic, so far as agriculture was concerned, were in very much the same condition as the Maritime Provinces, and the leading men of that country hoped through the introduction of other methods to bring about a change for the better. Influenced largely by the Hon. David Wark, the New Brunswick government invited Prof. Johnston to visit the province, and afterwards commissioned him to write a report on its agricultural capabilities, hoping in this way to give an impetus to agricultural development, and also to convince the public that there was nothing in the soil or climate of the province to interfere with the production of the principal crops. Prof. Johnston accepted the commission and the report was published in 1850. It is a volume of two hundred and sixty pages, and contains a large amount of well digested information. The report was most favorable to the province and must have been very satisfactory to the government and the public generally; but whether it made the farmers better satisfied with their lot or not, I have no means of ascertaining. That the present generation may know what the foremost agriculturist of Great Britain thought of New Brunswick and its people more than half a century ago, I shall make some rather long extracts from the report.

Professor Johnston must have landed at Halifax, and spent a day or two in the province of Nova Scotia. He says: "I have a vivid recollection of the disheartening impression regarding the agricultural capabilities of Nova Scotia which the first two days I spent in that province around Halifax conveyed to my mind. Had I returned to Europe without seeing the other parts of the province I could have compared it only with the unproductive portions of Scandinavia." He then goes on to say of New Brunswick: "A large proportion of Europeans who visit this province see only the rocky regions which encircle the more frequented harbors. But on the other hand, if the stranger penetrate beyond the Atlantic shores of the province and travel through the interior, he will be struck by the number and beauty of its rivers, by the fertility of its river islands and intervals, and by the great extent and excellent condition of its roads." Again speaking of New Brunswick from its first settlement: "For my part in taking a general survey of the actual condition of the province in connection with the period of its earliest settlement, and with the public revenues it has possessed from time to time as means of improvement, I have been much impressed with the rapid progress it has really made and with the large amount of social advancement which is everywhere to be seen. When I have heard natives of New Brunswick complain of the slowness with which the province advances, I have felt persuaded that the natural impatience of a young country to become great, like that of a young man to become rich, was blinding them to the actual rate the country was going forward—a rate so different from what is to be seen in any part of the "Old World," with the exception of the island home from which we have come. . . . When I consider how much slowness their exists at home in the introduction of easily effected agricultural improvements, when in all parts of Europe I find a more slow progress still, and very much still to be done before they can arrive at the present condition of agriculture in Great Britain, much less overtake her in the race of improvement, I can look with much forbearance on the backwardness in agricultural practice of a large proportion of the yeomen of this province.

The past circumstances of the country, the mode of settlement especially, and the character of the settlers, have almost necessarily produced the existing state of things; and from all I have been able to learn, it would appear that as much advance has been made toward a rational system of husbandry, as was made after its first settlement by any other part of North America in an equal period of time."

The next paragraph applies with quite as much force at the present time as it did when it was written half a century ago. "The agricultural condition of a large portion of the cultivated lands, however, is such as to warrant the expectation that certain changes in the mode of agriculture, and in the practices of the cultivators might be easily introduced, which would scarcely fail to increase the existing productiveness of the soil, and thus to add to the comfort of those who till it, as well as to the resources and general prosperity of the province."

Again he says: "In justice to New Brunswick I must add another fact. In every part of the world it has been my fortune to visit I have met with numerous individuals who were more or less interested in and anxious to promote the agricultural improvement of their native country, but in New Brunswick a more general feeling appears to prevail upon the subject among all educated persons than I ever before met with. Whatever differences may exist among them, a universal desire is expressed to contribute some little help toward the general prosperity and agricultural advancement of the country." I believe this desire to see the country prosper in its agriculture is still a characteristic of all classes in the province.

Prof. Johnston classified the soils of New Beunswick as follows:

No. I. 50,000 acres, capable of producing 2½ tons of hay or 50 bushels of oats per acre.

No. II. 1,000,000 acres, capable of producing 2 tons or 4 bushels oats per acre.

No. III. 6,950,000 acres, capable of producing 1½ tons hay or 30 bushels oats per acre.

No. IV. 5,000,000 acres, capable of producing 1 ton of hay or 20 bushels of oats per acre.

No V. 5,000,000 acres incapable at present of cultivation.

From the above, the data is taken for estimating the number of inhabitants New Brunswick is capable of sustaining. When reading the report a number of years ago, I was much interested in the way Prof. Johnston worked out his calculations, and I shall give an abstract of it here, in the hope that present day readers may still find it interesting.

The whole production of food for man or beast which the province would yield, supposing all the available land to be cultivated according to present methods, and that hay and oats bear to each other the relation of one ton to twenty bushels would be 17,555,000 tons of hay, or 351,000,000 bushels of oats. What amount of population will this quantity of food sustain? There are various ways by which we may arrive at an approximation to the number of people which a country will comfortably maintain upon its own agricultural resources. The simplest and most commonly adopted in regard to a new country like this is to say if so many acres now in cultivation support the present population, then, as many times as this number of acres is contained in the whole available area of the country, so many times may the population be increased without exceeding the ability of the country to maintain it. Thus in New Brunswick there are about 600,000 acres under cultivation, and the produce of these acres sustains of—

Men, women and children	210,000
Horses and cattle	150,000
Sheep and pigs	250,000

But 600,000 are contained in 13,000,000, the number of available acres in the province nearly twenty-two times, so that supposing every 600,000 acres to support an equal population, the province ought to be capable of feeding about—

Men, women and children	4,620,000
Horses and cattle	3,300,000
Sheep and pigs	5,500,000

Prof. Johnston then states that this may be faulty for three reasons: (1) Because it was not known that just 600,000 acres were at that time cultivated. (2) The best land was probably already taken up. (3) The very important question of fuel had been left out of consideration. He then seeks to prove the result by approaching the subject from another direction.

"If we suppose a full grown man to live entirely upon oats without other food, he will require to support him for twelve months about one thousand pounds of oatmeal equal to about two thousand pounds of oats, which at the low average of thirty-five pounds per bushel amounts to fifty-seven bushels. If we allow that each of the population, big and little, consumes forty bushels, an apparently high average, then the consumption of each individual would be equivalent to two tons of hay. In other words, the breadth of land which would grow two tons of hay would, on an average, support one individual, if fed entirely on oatmeal.

The usual allowance for the winter food of a horse in this province is four tons of hay, and for a cow two tons. Sheep and pigs may be estimated at a quarter of a ton each.

The horses and cattle together are estimated at 150,000. If the relative proportions of the two kinds of stock be as in Canada West, about one horse to four cattle, then the entire population and live stock (poultry, dogs, &c., &c., excluded) would require for their support the following amount of produce calculated in tons of hay:

210,000 people at 2 tons each	420,000 tons
30,000 horses at 4 tons each	120,000 tons
120,000 cattle at 2 tons each	240,000 tons
250,000 sheep and pigs at ¼ ton each	62,500 tons
	842,500 tons

But we have seen that the average produce in hay of the whole thirteen millions available land may be estimated at one and one-third tons per acre. The above 842,500 tons of hay, therefore, represent 631,875 acres of land of average quality. It will be observed that this sum comes very near the extent of land supposed to be at present actually cultivated in the province. It is also about one-twentieth part of the whole available area (13 millions), so that the province, according to this mode of calculation, may be supposed capable of supporting twenty times its present number of inhabitants and of live stock, that is :

Men, women and children	4,200,000
Horses	600,000
Cattle	2,400,000
Sheep and pigs	5,000,000

The report goes on to state that while no allowance has been made for the pasturage of cattle and horses during the summer months, all the stock has been supposed full grown. Then, as no allowance has been made for the human food supplied in the form of beef, mutton, pork, milk, cheese and butter, one third more could be added to the population to be supported by these animal products. Also the fisheries have not been estimated. The value of these, Prof. Johnston suggests, may be allowed to stand against the West India produce and other necessaries of life which cannot be raised at home. It thus comes about that Prof. Johnston fixes upon five and a half millions as the amount of population New Brunswick in ordinary seasons would easily sustain.

Chapter IV. of the report deals with the question of fuel, and the conclusion is reached that unless fossil fuel be found in large quantities, no such population as that mentioned can be sustained in New Brunswick. He estimated that two acres of woodland must be reserved for every inhabitant. As the calculation included all the waste land excepting 5,000,000 acres, this would reduce the population to two and a half millions, and would allow no fuel for industrial purposes. "If New Brunswick possesses in its mineral resources an available supply of fossil fuel, sufficient for its domestic wants, it might hope to sustain in comfort a population approaching to six millions. On the other hand, if wood is to be grown and consumed for fuel, and to be grown on accessible and economical places, its capabilities sink down to the maintenance of three and a half millions of inhabitants, and one-half the number of live stock. It may indeed be said that much time will elapse before New Brunswick can feel any inconvenience from a want of fuel; and speaking of the province generally this would be true. But in particular localities where clearings and settlements have extended, fuel is already becoming scarce and dear. Such is the case, for example, in Sussex Vale; and it is the pressing wants of the more advanced parts of a country which indicate the kind of measures which must be adopted, or legislative proceedings taken for the future good of the whole." Prof. Johnston then carefully summarizes all the information he was able to obtain about the coal measures of the country. While reports were conflicting, he was not able to predict that the province would ever be able to look to fossil fuel of its own to take the place of wood.

Chapter V. deals with the roads as connected with the development of the agriculture of the province. A list of all the great roads is given and the number of miles tabulated at twelve hundred and sixty-nine. The report says in reference to the public roads: "I cannot conclude this chapter without recommending to your excellency and to the Houses of the Legislature not only a continuance of the enlightened care hitherto bestowed upon the great roads, but a better consideration to all roads which purpose to open up the better lands of the province to the settler." One can't help wishing that the "enlightened policy" that characterized the government of that day was a little more in evidence at the present time and that those who use the roads, as well as governments, had a better appreciation of the value of good roads in the interest of the farmer. Prof. Johnston closes this chapter on roads with this sentence: "I have already observed that in all countries the roads are not only the most important agents in developing the natural agricultural resources but they are also an index of the zeal of those who govern in behalf of this fundamental interest of a state and of their wisdom in encouraging the use of the means most likely to promote it."

Chapter VI. gives the actual and comparative productiveness of the province, as shown by the average quantities of wheat and other crops raised. The following comparison is made between the State of New York and New Brunswick, which must have been very satisfactory to the people of this province. Of course the yield of wheat and potatoes put down for New Brunswick must have been before these crops had suffered with the "blight" and weavil.

COMPARISON.

State of New York.	New Brunswick.
Wheat, 14 bushels per acre	20 bushels
Barley, 16 bushels per acre	29 bushels
Oats, 26 bushels per acre	34 bushels
Rye, 9¼ bushels per acre	20½ bushels
Buckwheat, 14 bushels per acre	33¼ bushels
Indian Corn, 25 bushels per acre	41¾ bushels
Potatoes, 90 bushels per acre	226 bushels
Turnips, 88 bushels per acre	460 bushels

Mr. Johnston remarks on this comparison: "The superior productiveness of the soil of New Brunswick as it is represented in the second of the above columns is very striking. The irresistible conclusion to be drawn from it appears to be that looking only to what the soils under existing circumstances and methods of culture are said to produce, the province of New Brunswick is greatly superior as a farming country to the State of New York."

After making a comparison with Canada West in 1848, and New Brunswick, which is as much in favor of New Brunswick as that made with the State of New York, the report says: "I do not dwell on the very unfavorable and on my own part unanticipated results of these comparisons. Before quitting the topic, however, I may be excused for observing that I do not personally vouch for the accuracy of the New Brunswick returns. They are all I have been able to collect, and are, I believe, the only ones which exist. I am bound to assume they have been given me in good faith, and with due previous consideration of such circumstances and objections as the above, and I must reason on them accordingly.

"On the whole, therefore,, I think the result of this comparison of the actual productiveness of the soil of New Brunswick with that of all other parts of North America ought to be very satisfactory to the inhabitants of this province and is deserving of their serious consideration.

"If New Brunswick exceeds New York in productiveness it ought also to exceed all the states of New England, and if it will in this respect bear a favorable comparison even with Ohio and Upper Canada as the comparison shows, it becomes doubtful how far on the whole the Western States are superior to it." Mr. Johnston adverts to another point brought out by one of his letters, which he thinks is deserving of mention. This is the great weight per bushel the grain crop in New Brunswick frequently attains. Wheat is said sometimes to reach the enormous weight of seventy pounds per bushel, and oats to fifty pounds a bushel. But from sixty-two to sixty-six pounds for wheat are common and forty pounds for oats.

The average weights for the whole province are:

Wheat	60	11-13	lbs.	Buckwheat	48	8-11	lbs.
Barley	50		lbs.	Indian Corn	59½		lbs.
Oats	38		lbs.	Potatoes	63		lbs.
Rye	52½		lbs.	Turnips	66		lbs.
				Carrots	63		lbs.

"These average weights over a whole province where the land is new and manured only in rare instances or at long intervals, indicate a capacity in the soil and climate to produce grain for human food of a superior quality.'

There is little doubt but that the soil of New Brunswick for growing crops is superior to any part of the New England or the middle states. Our people are not now leaving New Brunswick and never have been, to farm in these states. It must be remembered that North America's "great west" was not opened up nor taken into consideration when Professor Johnston made his report.

Chap. VII. deals with the absolute and comparative prices obtained for agricultural produce in the different parts and counties of the province, and begins by saying:

"From what has been stated in the preceeding sections it appears to be satisfactorily shown: 1st. That the soil of New Brunswick is capable of producing food for a very much larger population than now exists upon it, and 2nd. That on the whole the cultivated lands of the province in their present state, at least are as productive as those of Canada West, of the State of New York, or of the State of Ohio, and 3rd. There are reasonable grounds also for believing that the quality of the grain it produces is equal to any, and will produce as good flour and meal as are manufactured from the wheat and oats of the United States or Canada.

The average price of beef per pound in 1848, was 3¾ pence, mutton, 3½ pence, pork 3¾ pence, cheese 5¾ pence, butter 9¾ pence.

After comparing the produce per acre and the market prices in New Brunswick with those in Upper Canada, the State of Ohio and the State of New York, Prof. Johnston says: "A glance at these columns shows how much larger a money return the New Brunswick land yields to the farmer than that of either Upper Canada or the State of Ohio. Unless there be something very special in the circumstances of the New Brunswick farmers, therefore one cannot refrain from concluding: 1st. From the amount of produce. (a) That grain and roots can be raised more cheaply in this province than in either New York State, the State of Ohio, or Upper Canada; and (b) That it ought to be able to compete with those countries successfully and drive them out of the home markets."

"2nd. From the prices obtained: That if the farmers in these countries can make a living, the New Brunswick farmer should be able to do so easier and should be better off than they are."

Chapter VIII. speaks of the climate of this province in relation to its agricultural capabilities and to the profits of farming. The report says: "Two things in regard to the climate of New Brunswick I feel myself compelled by all the evidence I have collected unreservedly to admit."

"1st. That it is an exceedingly healthy climate. Every medical man I have met in the province, I believe without exception, and almost every other man I have conversed with assures me of this and the healthy looks and the numerous families of the natives of all classes confirm these assurances.

2nd. That it does not prevent the soil from producing crops which, other things being equal, are not inferior in quantity or quality to those of average soils in England, while the tables of produce introduced into a previous chapter show that according to our present knowledge it permits the soil of New Brunswick to yield crops which exceed the present averages of Upper Canada and of the States of New York and Ohio."

Prof. Johnstou had circulars printed and circulated among the practical farmers in each of the counties of the province and it was in this way he received a large part of the information contained in the report.

The following is a list of the names of the men to whom the circulars were sent and that replied to the questions:

D. B. Stewart,
David Mowatt,
John Mann,
R. K. Gilbert,
R. B. C. Weldon,
Charles Dixon,
Joseph Walton,
James Stevenson,
John Forner,
Howard D. Charters,
William Crane,
John Trenholm,

Alex. Monroe,
George Otty,
Thomas Beer,
Matthew McLeod,
Wm. Keith,
Allan Coster,
Wm. Reed,
Samuel Mahood,
C. L. Hatheway,
Chas. H. Clews,
Edward Simons,
John H. Reid,
Robert D. James,
Israel Parent,
John Porter,
Wm. Dow,
Jas. L. Pickett,
Wm. H. Steves,
Wm. Wallace,
Jos. C. Wheton,
H. W. Baldwin,
Joseph Avard,
Henry Hayward,
Andrew Aiton,
Daniel McLauchlan,
Daniel S. Smith,
John Robertson,
Wm. Pindar,
Robt. Smyth,
Nath. Hubbard,
Chas. Harrison,
James Johnston,
Wm. Wilmot,
Edwin Jacob,
James Case,
Dugald Stewart,
James Rankine,
John Smith,
John Lewis,
John McLatchy,
J. G. G. Layton,
E. Lockhart,

On the above authority Mr. Johnston makes the average latest plowing in New Brunswick Nov. 17th, and the average earliest sowing April 21st. The very latest plowing is put down at Dec. 1st; Joseph Avard, George Otty, Henry Hayward and Thomas Beer put it at this date. The earliest sowing is March 17, sent by R. K. Gilbert.

From data secured in this way the following deductions are obtained:

1st. Taking the earliest sowing in the province 17th March, and the latest plowing as 1st Dec., the longest open season from these dates would be eight months and fourteen days.

2nd. Taking the latest early sowing as 15th May, and the earliest late plowing as 1st November, the shortest open season from these dates would be five months and fifteen days.

3rd. The mean length of the open season from these two results would be six months and twenty-two days.

The tillage of the land and the growth of the crops must therefore in this part of the world be all accomplished in an average period of six months and twenty days.

Of this period the growth of the wheat and the crops of spring corn require an average period of three months and seventeen days, as will be seen by this table:

1st. Spring wheat	3 months 20 days
2nd. Barley	3 months 6 days
3rd. Oats	3 months 20 days
4th. Spring rye	4 months 0 days

5th. Buckwheat	3 months 3 days
6th. Indian corn	3 months 22 days
Average period of growth	3 months 17 days

	M.	dys.
Thus the average duration of summer	6	22
The average period of growth	3	17
This leaves for the spring and autumn plowing, &c., before seed time and after reaping, &c	3	3

This leaves about seven weeks clear for autumn plowing and six weeks during which plowing and other preparatory work can be done in the spring. Prof. Johnston admits that these periods are short compared with the length of time for out-door labor which English and more southern Scottish farmers possess. Some one has said that a man owning two farms one in England and one in New Brunswick could do his seeding in England, take passage to this province and be there in time to put his crop into the ground on his New Brunswick farm. Vegetation is so much more rapid here that he could harvest his crop here in time to return to England to house his English crop.

The report says that two points may be considered as palliating or counteracting the evil which arises from the short time the climate allows a farmer here for seeding and harvesting his crop as compared with the time the British farmer has for doing the same work. The number of days during which rain impedes the operations of the British farmer is notoriously very great. In some counties which possess soils of a very tenacious character this brings in another evil in addition to that which attends the New Brunswick winter.

"It not only shortens the period during which the work of preparing the land can be done, but it also makes it heavier or more difficult to do. Thus the farmer's expenses in Great Britain are considerably increased by the precarious nature of the climate in which he lives."

"But in New Brunswick the climate is more steady and equable. Rains do not so constantly fall, and when they do descend, the soils in most parts of the province are so porous as readily to allow them to pass through. Thus the outdoor operations of the farmer are less impeded by rain, and the disposable time he possesses, compared with that of the British farmer, is not to be measured by the number of days at the disposal of each."

What is said in the paragraph just quoted no doubt gives the Canadian farmer an advantage over his brother farmer in England, but New Brunswick suffers in the same degree or greater in comparison with the Northwest from which quarter comes at present the competition that is telling most grievously against the farmers of New Brunswick.

In 1848 Mr. Samuel Mahood of Queens County, kept a record of the weather which seems worth publishing now as showing the kind of weather the people enjoyed over sixty years ago:

1848	No. of stormy days.	No. of cloudy days.	No. of clear days.	Greatest heat.	Greatest cold. (Fahrenheit.)
January	4	5	22		14 degrees below
February	10	5	13		6 degrees below
March	7	4	20		down to zero
April	5	4	21		20 degrees below
May	7	8	16		
June	11	4	15	110 degrees in sun	
July	9	3	19	116 degrees in sun	
August	9	4	18	122 degrees in sun	
September	13	6	11	58 degrees in shade	
October	14	2	15		
November	8	1	21		
December	7	5	19		10 degrees below
Total	104	51	210		

One would think that must have been an exceptional year for storms. Ten in February, eleven in June; thirteen in September, and fourteen in October, with one hundred and four in the whole, makes nearly every third day a stormy one. March and November, which usually have a bad record for storms, show forty-one clear days between them, with only fifteen stormy ones. In 1849 there were two days, one in June and one in July, that registered 100 degrees in the shade.

A table is given showing for twenty-four years the date of the closing of the St. John River, the Erie Canal, New York, and the first snow in the State of Maine.

Average date for the closing of the St. John River, November 16.

Average date for the closing of the Erie Canal, December 7.

Average open water St. John River, 218 days.

Average open water Erie Canal, 240 days.

This, the writer argues, indicates a difference in the length of the winter in the two countries of twenty-two days, and is almost identical with the result deduced from the time the Winter sets in here and at Albany, New York. One date being 16th November and the other the 7th December.

Prof. Johnston says, "Two facts follow from the numbers in the tables :

1. "That the Winter in Western New York is twenty-two days shorter than in New Brunswick.

2. "That this shortness consists in the addition of twenty-one days to the open weather in the Fall and only one day to the open weather of the Spring.

It appears therefore for his Spring operations the New York farmer has only one day's advantage over the New Brunswick farmer, while he has twenty-one days longer to labor on his land in the Autumn.

One of the questions Prof. Johnston sent to his correspondents was as to the effect of frost and the New Brunswick winter generally upon the soil. His summing up after the replies were received concludes as follows: "On the whole I think we must allow that, though the period for out-door labor is shorter in New Brunswick—as it is in the Canadas, Maine and in the Northern States—than in England or in some parts of Scotland, yet that the action of winter upon the soil is such to materially lessen the labor necessary to bring it into a proper state of tilth. And though we may not go so far as a certain Mr. Gray in regard to the comparative amount of work which a pain of horses may under proper management be made to perform during the more brief summer, yet we may, I think, fairly conclude that there is nothing in the length of the winter which ought—where time is diligently employed, and its value is known—seriously to interfere with the progress of out-door operations or materially to add to the expenses of arable cultivation.

As to the extent to which the Winter interferes with and diminishes the farmer's profits, Professor Johnston makes the best case he can, and it is a pretty good one. He says virtually that we are not an exception in this particular, that it is common in other parts of North America and that it is not wise to complain, but rather to get about in earnest—to overcome it so far as we can and this can be done in some degree by raising the largest amount of food for stock from the smallest breadth of land; and the very climate he complains of affords him some special facilities for doing so." He says: "The custom of neglecting hay land ought to be given up by every settler new and old, and after two years' cutting at the most, except where it is very rank, it ought to be ploughed up and cropped after being manured. Thus larger crops of hay would be universally obtained and a smaller portion of the cleared surface of the province be taken up in the feeding of its stock."

"Another equally important step in this direction, which it is the duty of the New Brunswick farmer to take, is the growth of grain crops in greater abundance and over a larger portion of his land than he has hitherto devoted to this purpose; and it is here that the special adaption of the climate, to which I have alluded, tells. The tables previously quoted have shown that in potatoes and turnips this province greatly exceeds the present average produce of any of the other parts of North America with which it has been compared."

The above advice as to raising hay, green crops and turnips is just the kind of advice the farmers are receiving at the present from all our Gamaliels in scientific agriculture and is no doubt sound instruction. According to some authorities an acre of land in turnips will go three times as far as the same acre under hay. Crops vary so much that no general rule can be established. It is certain only that by feeding cattle partly with turnips and partly with hay or other dry food not only will the same extent of land support more stock, but the same weight of food will go farther than when either of the two is given singly.

The effect of the winter on stock was another of Mr. Johnston's questions. Following are some of the more interesting answers to this question :

1. Where proper care is taken, as housing, etc., the effect of the long winter is not injurious. Cattle in this country are not subject to disease.
D. B. STEVENS, St. John.

3. Expensive to winter, particularly if not kept in warm stables.
DOVEEL MOWATT, Charlotte.

5. Cattle require more fodder and better shelter than is generally given.
JOHN MANN, Charlotte.

6. Very prejudicial in all cases but more particularly when hay is scarce. JOHN FARMER, Charlotte.

7. Stock must be kept in a warm place and well attended or otherwise the long winter will materially injure it. M——, Westmorland.

8. The growth of stock or cattle is much retarded during winter, but with warm housing they will retain a fair condition upon coarse hay.
R. K. GILBERT, Westmorland.

9. They get thin and weak toward spring.
HOWARD D. CHARTERS, Westmorland.

10. The long winters have a bad effect on stock as it requires much care, attention and experience to keep them in good condition.
ROBERT B. CHAPMAN, Westmorland.

11. No harm with proper care.
R. B. C. WELDON, Westmorland.

12. Long and cold winters are unfavorable to stock.
WM. CRANE, Westmorland.

14. The stock frequently become poor during the long winter.
JOHN TRENHOLM, Westmorland.

17. Stock, if well fed and warmly housed, suffer no deterioration.
GEORGE OTTY, Kings.

18. The stock of neat cattle do not thrive so well, particularly cows.
A. E. EVANSON, Kings.

19. The long winters hurt the growth of stock and without the greatest attention they get reduced. HARRY HAYWARD, Kings.

20. The stock do not suffer so much as might be expected; if warmly housed and well fed. THOMAS BEER, Kings.

20½. If judiciously fed and well housed, in better condition than when put up. ANDREW ACTON, Kings.

21. The winters have no injurious effect if cattle are comfortably housed and liberally fed. MATTHEW McLEOD, Kings.

22. Cattle, through the whole winter must be attended with great care, their houses made as warm as possible and proper attention to cleaning, watering and feeding. Stock properly attended will winter admirably.
DANIEL McLAUCHLIN, Kings.

24. If the stock is well housed and fed, they thrive as in summer.
DANIEL S. SMITH, Queens.

25. Stock put up in good order, with care, improve in the winter.
ALLAN CARTER, Queens.

28. The stock do not improve much in growth unless kept well on the best of provender. WILLIAM REED, Queens.

29. The winters are very severe on the stock.
WM. PINDAR, Queens.

32. Stock well housed and fed thrive well in winter.
C. L. HATHEWAY, Sunbury.

34. Stock do well in winter if taken proper care of.
CHARLES H. CLOWES, Sunbury.

36. Cattle, if properly housed and fed lose but little.
EDWARD SIMONDS, York.

38. Give the high bred cattle the same chance of feed and care in this province that they do at home, and they will vie with them as far as sheep, pigs Durhams, Devons, Herefords or Ayershires are concerned.
JOHN H. REED, York.

41. The winter has a bad effect on stock, unless they are well fed and comfortably housed. ROBERT D. JAMES, York.

44. The stock is much impaired by the long winters, having to be fed on dry food for six months. ISRAEL PARENT, York.

47. The winters are injurious to stock.
JAMES L. PICKEL, Carleton.

50. The stock, if kept housed in warm stables, do not mind the cold weather, and if properly attended improve during the coldest of the winter. JOHN LEWIS, Albert.

51. The stock, if kept in warm stables do not mind the cold, and if properly attended will improve during winter.
WM. WALLACE, Albert.

53. On account of the expense of feeding cattle during the winter, they are generally poor in the spring and it requires the whole summer to revive them. JOSEPH C. WHEATEN, Kent.

55. The winters are not injurious to stock of any description when comfortably housed; either from their length or severity.
JAMES CAIE, Northumberland.

58. Long and severe winters are doubtless trying upon cattle, and if not well housed and attended to, reduce their strength and weight but are seldom fatal. HENRY W. BALDWIN, Gloucester.

62. On stock it is not so severely felt as in the climate of Britain, for, instead of your wet, chilling atmosphere, here is a clear sky, dry frost bracing the nerves from December to April with not more than two or three rain showers during that period. Sheep thrive best fed out in the open air with an open house or shed for them to enter at pleasure.
DUGALD STEWART, Restigouche.

We have in the above the opinion of thirty-five men, representing all or nearly all the counties of the province, on the effect of New Brunswick winters on stock, sixty years ago. If the question was given to as many farmers of the present time to answer, the replies would surely more nearly agree and would be best expressed in the answer of Mr. Caie, of Northumberland.

The cost of hired help seems to have been quite as serious an item in the farmer's account fifty years ago as it is now, although the rate of wages was very much lower. The report gives the rates paid in 1849 as follows:

Lowest for the whole province by the year	£10
Highest for the whole province by the year	£36
Average	£23

Average by the month, three pounds, in harvest.

Average for other seasons, two pounds.

Average by the day in harvest, three shillings and three pence.

Average by the day at other times, two and six pence.

These figures are given in the old New Brunswick currency, one pound of which was equal to four dollars.

In reference to education, the report suggests the introduction of a certain amount of agricultural instruction into the elementary and other schools of the province, as the easiest and surest way of leavening the whole mass of the community with a fair share of the higher knowledge of agriculture.

Mr. Johnston continues on the subject, "The instruction given in the elementary schools ought to be on the principles of agriculture rather than on the performance of the manual operations of the farm. But it is desirable, nevertheless, and necessary, I ought to say, that practical agriculture should be taught in the province on a scale sufficiently large to embrace all the ordinary operations of a provincial farm, and under the direction of a person of acknowledged practical skill in whom the public would have confidence and whose opinions and practice the pupils might safely adopt and follow."

Mr. Johnston thinks two such farms might be established beneficially for this province in districts remote from each other where the soils are of unlike qualities and where the establishment of them would be accomplished with comparatively little expense. In connection with these farms a course of instruction should be given in the various branches of science which are related to agriculture. Sackville and Fredericton are suggested as places where these farms and schools might be located. Speaking of the Academy at Sackville the report says: "If a farm were connected with it and a skilful, practical person provided to manage it and to give practical instruction to the pupils, the present staff of teachers and the apparatus and other instruments of tuition already provided for the institution would in a great measure meet the necessities of the new department."

The next suggestion is that the principal agricultural school and farm of the Province might be fixed immediately under the eye and direction of the provincial authority at Fredericton and be opened to the yearly inspection of the assembled legislative body.

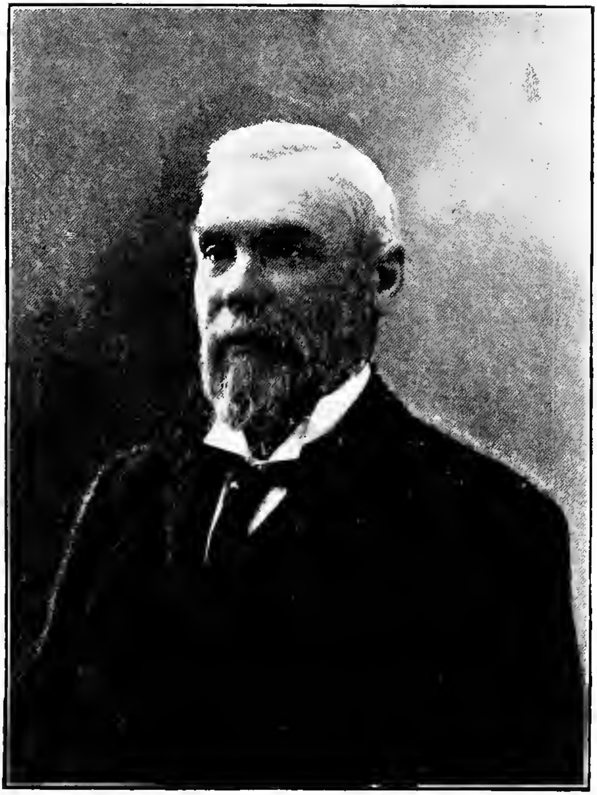
"It cannot be doubted that if a farm and school were well conducted in that locality it would exercise over the numerous visitors from other parts of the province an influence very salutary to its general agricultural interests. It is not recommended that this school at first at least be attached to any department of the college but left untrammelled by the rules and customs of an already existing school, literary or scientific."

More than half a century has elapsed since the above recommendations were made and great changes have come about not only in farm life but in the views of governments in relation to their obligations to the pursuit of agriculture. State Agricultural Colleges, Experimental Stations and Model Farms have all come to remain, but New Brunswick is still without its school of agriculture. Reference to this fact was made and regret for it expressed by the superintendent of education for this province at the meeting of the Farmers' and Dairymen's Association held in Fredericton in January last. Instead of being the province to lead in this as New Brunswick might well have been, since she was the first to have her attention called to it she is now doomed to be the last to fall into line. The successive governments in New Brunswick never seem to have been quite convinced that the amount of money required for such an undertaking would yield paying results applied in that way. Nova Scotia public men have thought differently and the new Agricultural College at Truro is an accomplished fact.

There is another reason why New Brunswick should have taken the lead as compared with Nova Scotia in giving her sons especial opportunities to acquire advanced knowledge in relation to the cultivation of the soil. Nova Scotia has her coal, iron and gold besides her great fishery privileges, while New Brunswick in herself is almost exclusively confined to her agricultural resources.

It is but fair to the present government of this province and to Commissioner Farris and Deputy Peters to say that they seem fully alive to the fact that the young men of this province who expect to become farmers should be placed on an equal footing with the young men in the other provinces of Canada. They have, therefore, made arrangements by which a certain number of New Brunswickers may attend the college at Truro without having any outlay for travelling expenses.

There are forty recommendations in the report to which the attention of the Legislature, Mr. Johnston thinks, might beneficially be directed. These recommendations include about all that the advanced agricultural scientists recommend for adoption by farmers at the present time, and show how well Prof. Johnston understood what he was talking about.



HON. L. P. FARRIS.
Commissioner of Agriculture, Province of New Brunswick.

If any agricultural societies at the present time are looking for new objects for which to offer premiums they will find a great number of suggestions under the heading, "Points to which Agricultural Societies are recommended to direct their attention." There are thirty of these suggestions, very few of which are found in any prize list at the present time. The following are some samples of these subjects :

"1 On the clearing of land without burning.

2 On the draining of swampy places by cuts or out falls.

3 On the thorough drainage of clays, of soils resting on clay sub-soils, and of land liable to be baked or burned up in Summer, or in which crops are Winter-killed by the frosts of Spring.

4 For rolling and draining grass lands liable to be Winter-killed.

15 On the saving of liquid manure in tanks.

20 On topdressing the young clover with earthy compost in Autumn as a preservative against being Winter-killed.

10 Experiments with other kinds of grasses besides clover and timothy, commonly used. Native grasses might probably be found that would be equally nutritive, productive, handy and lasting in the ground as these or more so. Rye grass does not suit the land or climate and it is usually thrown out or Winter-killed. After the timothy dies out other native grasses come up which are almost always poorer than the timothy, but if a good selection of native grasses were sown and allowed to get a hold of the land while it is in good heart, they might form a thick sole of grass which if properly pastured would not for many years become poor or mossy."

So far as I am aware the experiments in this direction of finding a valuable native grass at the Nappan Experimental Farm—and a number of grasses have been tried there—have not resulted in the finding of a grass that is likely to displace either timothy or clover. If farmers, however, follow generally the advice now given by experts at Farmers' Institutes and in the press, the growing of timothy to be used as a Winter feed on the farm, will soon become a thing of the past, and everyone will be growing clover.

"21 For the leaving or planting of trees for the purpose of shelter from cold or injurious winds.

22 For the planting of Maple groves and manufacture of sugar.

24 For improving stock from native as well as from imported animals.

25 For cows which give the richest milk.

26 For the largest produce of milk, cheese and butter from a single cow or from a dairy of cows.

27 For the best arranged and most comfortable cow house.

28 For the superior profit of warm, well-ventilated stables in saving food.

29 On the comparative profit of sparing and plentiful feeding in Winter.

31 For the manufacture, importation, and use of oil cake in feeding.

33 On the curing of beef, pork and butter.

7 To discourage the system of selling off hay from the farm and of otherwise robbing it without laying something upon it which shall be equivalent to what it has lost.

8 A trial of the use of lime judiciously applied to land rich in vegetable matter, but naturally poor in lime or in which crops grow too rank.

36 The formation of agricultural libraries in each limited district—within which the books will be readily accessible—and the circulation of agricultural periodicals.

12 The more general preparation and use of composts of all kinds and of green manures as a means of restoring worn out lands.

14 The adoption of a more generous and careful mode of rearing young stock.

37. For the cleanest and best fenced farm—the best cultivated on the whole—the largest and finest crops of particular kinds—the finest and best treated stock of cattle, or pigs, or sheep—the largest, best managed or most properly managed.

36. For the introduction of any new and profitable employment for winter."

After these comes recommendations to individual farmers. There are nineteen of these and with the exception of one or two, they ought to be printed by themselves and posted up in some place in every farmer's home, so that he might see them every day. They are:

"1 Thorough draining of soils, wet slopes and bottoms, and marsh or dyked lands where the fall is sufficient to admit of a ready outlet and a sufficient depth of drain.

2. Better cleaning and deeper plowing of the soil.

3. More care in sowing, collecting and applying manures of all kinds.

4. An abandonment of the system of cutting repeated crops of hay off the same land till it is exhausted.

5. An abandonment also of taking repeated successive crops of corn (grain) off the same land without alternation with other crops and without manure.

6. Cutting down grain of all kinds before it has attained its full size and grass before it runs to seed.

7. Cutting down Indian corn with a knife as in New York and the use of the stalks in feeding milch cows and other stock.

8. Sowing buckwheat or rye to plow in green and use bone dust to renovate worn out lands.

10. Taking advantage of every open day in the fall to plow and prepare the land for spring sowing.

11. Selecting good stock of cattle, pigs and sheep for keeping through winter.

12. Providing warm but well ventilated housing for them.

13. Feeding them plentifully that they may be in good condition when spring arrives.

14. Growing turnips and linseed with the view of adding to the quantity and enriching the quality of the food he has at his disposal.

15. Collecting carefully and preserving under cover all the manure made by his stock during the winter, that he may have it abundantly and in good condition for his potatoes and green crops when the time of planting or sowing comes.

17. Collecting carefully all waste bones, breaking and applying them to the land; especially the use of bones is to be recommended upon land which has been worn out by over cropping with corn (grain.)

18. Sowing down always with artificial grasses when land, after a corn crop, is to be left with a view to producing hay.

11. To provide shelter by fences or plantations for his fields and stock."

In the summary of recommendations to the legislature the following seem especially worthy of attention:

"1. Arterial drainage of wet lands, swamps and marshes.

3. The introduction of a certain amount of agricultural instruction into the elementary and grammar schools.

4. The same into the Normal school at Fredericton.

5. Into the Academy of Sackville,and the college at Fredericton.

6. An educational farm at Sackville in common with the Academy and the agricultural instruction given there.

7. An agricultural high school or college at Fredericton in connection with a school farm. In this high school a full course of agricultural instruction should be provided and it may or may not be connected with the existing college at Fredericton.

8. The establishing of district grain and cattle markets, to be held in places at stated periods for the convenience of buyers and the fixing of prices.

10. The establishment of a central agricultural society to which the grants of money to local societies should be entrusted.

16. The employment of a peripatetic practical agriculturist to visit the different settlements at the application and under the direction of the local societies to instruct the settlers in the husbandry of manure, turnips and other practical branches.

19. An analysis of the various limestones found in the province in reference to their fitness for agricultural and other purposes."

I have taken up more space with Prof. Johnston's report than I expected to at the beginning. My excuse is that it is most excellent reading for the New Brunswick farmer and will surely lead him to more confidence in the agricultural capabilities of his own province. A large part of the recommendation made to the legislature and individual farmers was at the time so far ahead of the views of those to whom the suggestions were made that apparently very little effort was made to carry them out; and it can very well be said that most of us have only lately reached that point in our ideas of agricultural practice when we are ready to make an honest effort to put into execution many of the suggestions made by Prof. Johnston in his report. I shall quote the summing up of one of the chapters, the eleventh, as a closing of my review of the report. "Of the various circumstances I have considered in the present and preceding chapters several have no doubt had much influence in rendering the agricultural body less prosperous, the agricultural interest less influential and the agricultural capabilities of the soil less appreciated in New Brunswick than under more favorable conditions they would undoubtedly have been."

"But it will be seen that all those circumstances are independent of and extrinsic to the natural capabilities of the soil itself and that they do not in reality determine or permanently interfere with the natural adaptation of the province as a field for agricultural exertion."

"The lumber trade may be put under proper restraint—the produce markets may be improved—labor may be profitably employed by all who desire to farm more largely—emigration from the province, so far as it may be regretted, may cease—the wheat midge, the rust and the potato disease may all disappear. The circumstances of he farmer would no doubt by all such changes be improved, but the natural capabilities of the soil and province would be still intrinsically the same."

"Now whilst these varied circumstances have been acting as I have said, more or less injuriously upon the interests of the farmer, it has been very satisfactory to my own mind and has disposed me perhaps to take, upon the whole, a less unfavorable view of their evil influences, that the unanimous reply to all my inquiries in every part of the province has been that those who have confined themselves to their farming operations alone and have been ordinarily skilful, industrious and prudent have in no case failed to do well."

CHAPTER IV.

Notwithstanding the reasons mentioned by Prof. Johnson, his recommendation to the Government to form a Central Agricultural Society for the Province was not adopted in full. A society was organized, however, in 1850 called the New Brunswick Society for the encouragement of agriculture, manufactures and commerce, with the Governor, Sir Edmund Head, as patron. Judging by the reports of the work of this society that have come into my possession, I must conclude that it attempted and accomplished much. It was only short-lived, however, for by 1855 it had run its course and dropped out of the race.

The membership consisted of the Government of the day and a few of the leading men from all the counties of the province. The Act of Incorporation was passed 26th April, 1850. Its revenues were to be made up by the membership fees and a grant from the government in the following proportions. "Whenever a sum not less than one hundred pounds had been actually subscribed and paid into the hands of the Treasurer of the Society, double that amount shall be paid by the government, provided always that the annual sum to be granted to such society shall not exceed the sum of two hundred pounds currency."

The officers of the New Brunswick Society in 1853 were:
Patron, His Excellency, Sir Edmund Head.
President, His Honor Mr. Justice Street.
Vice President, York Co., R. Chestnutt.
“ “ York Co., J. A. McLaughlin.
“ “ St. John, R. Jardine.
“ “ Charlotte, Hon H. Hatch.
“ “ Kings, A. C. Evanson.
“ “ Queens, Hon. T. Gilbert.
“ “ Sunbury, C. S. Hatheway.
“ “ Carleton, F. R. Coombs.
“ “ Restigouche, A. Barberie.
“ “ Gloucester, Thos. Napier.
“ “ Northumberland, J. Wright.
“ “ Kent, Hon. D. Wark.
“ “ Westmorland, Hon. A. E. Botsford.
“ “ Albert, Geo. A. Clark.
Corresponding Secretary, T. Robb, M. D.
Recording Secretary, R. Fullerton.
Treasurer, T. Gaynor.

Other members of the Executive were: J. A. Beckwith, D. S. Kerr, J. Gregory, W. Carman, R. Gowan.

In 1852 the first provincial exhibition was held under the auspices of the New Brunswick Society.

This exhibition was a great success and perhaps surprised the people of New Brunswick more than it did the visiting strangers. There had been a year or two of good harvests, and trade that had been so depressed in the forties was beginning to survive and was seeking new channels, besides the manufacturers and farmers of the province had never exhibited their products together in one building before. The result was therefore a surprise at the quantity and excellence of the exhibits in almost all the different classes. The crowd during the first day was overpowering and some idea of the number may be had from the fact that during the day the large sum of two hundred and fifty pounds was received for tickets for admission alone. "The effect of the sight of our exhibition of agricultural produce is well described," the report of the Society says, in the following extract from a recent lecture of our clever and amusing friend, W. Watts, Esq.: "John Bluenose stood amazed, surprised, confounded in view of the crops of his own farm and garden—thought at first it must be somebody else's and when the glad surprise settled at last into the glorious conviction that it was all the fruit of provincial fertility and industry, John fired up with new courage, cocked his hat, gave a tug to his shirt collar and went home with a larger faith, vowing he would make the next show better.

"But you must not suppose that Bluenose was led to this conviction by the evidence of his own eyes employed on these trophies of his own field. That had been too bold by half for him. He had to wait till a gentleman, who had just returned from the great Upper Canadian Fair, then lately held in Toronto, had first declared that our farm produce was greatly superior to theirs; till another traveller who had been present at many of the great agricultural anniversaries in the United States, had given the same testimony; till Mr. Sykes, the English railway contractor, had endorsed a similar opinion, and an Ayreshire farmer who had time and again seen the finest agricultural shows in Scotland, repeated the same tale; then and not till then the glad assurance settled down in the heart of Bluenose, that, notwithstanding his little faith, his imperfect husbandry, his paucity of agricultural implements, his wastefulness in manures, his carelessness in drainage, his disregard of systematic cropping; indeed, of all the appliances of scientific agriculture, the simple fertility of the soil and of his own unskilled labor had enabled him to gather on these shelves a show of field and garden productions worthy to be pitted against the best results of wealthy and systematic farming in the best agricultural districts of the old world or the new."

It was at first intended only to give two hundred and fifty pounds in money for prizes but the list of artices named by the committee was so much larger than was expected that double that sum was offered. Thus two thousand dollars was the money value of the prize list in our first provincial exhibition. Previous to this date, 1852, the president and directors of the Mechanic Institute of St. John had held an exhibition that was aimed to be provincial in its character, and was very successful, but could not properly be called a provincial exhibition.

I must make another extract from the report of this exhibition. "In the evening the crowd was as great as before but perfectly orderly and good humored, and everyone seemed more than satisfied. The effect of the whole by gas light was eminently beautiful; rich and poor, old and young, all felt that the credit of the province was safe. A glance at the dazzling spectacle instantly dispelled all doubts as to the capabilities of the soil of New Brunswick to bear all the proper products of a temperate clime, all doubts as to the capabilities of the mechanics of New Brunswick to vie in skill and ingenuity with any others in the world. The first and valuable result of our exhibition is that New Brunswick now has faith in itself. Professor Johnston's report did as much as a written paper could do toward that object, but the sight of our Agricultural products contained in the exhibition building gave evidence and proof as strong as Holy Writ."

One evening during the exhibition Judge Wilmot addressed a large audience in the New Market Hall in which he said a good many complimentary things about farmers and farming. At the opening of the lecture, S. K. Foster sang the song of the great exhibition. The report says that was a beautiful and appropriate composition by Mr. Foster, to words by H. Watts, Esq. This song was composed, set to music and printed in a marvellously short time and the profits of the sale of it were generously handed over to the exhibition fund.

Below is the song :

"EXHIBITION SONG."

"We sing, oh! we love to sing,
The wealth of our own free land;
From sons of toil, and a fair fresh soil,
See the harvest on every hand!
From forge, from bench, from mine,
From river, and lake, and sea,
From the strong of arm, and the cunning hand,
These glorious guerdons be.

"Swart labour, bold and brown,
With health and with hope a-glow,
Our artizan, and our husbandman
Their peaceful trophies show;
From forge, from bench, from mine,
From river, and lake, and sea,
From the strong of arm and the cunning hand,
These glorious guerdons be.

"The arts in a glad array,
The glories of woman's skill,—
Ho! good and fair in a union rare,
We hail them with right good will;
From loom, from lathe, from frame,
With spoils from the land and sea,
From the gentle taste and skilful hand,
These glorious guerdons be.

"We sing, we exult to sing,
The wealth of our own free land;
Ho! sons of toil, ho! ou glad, free soil,
See your trophies on every hand;
God bless the bench and forge,
The mine and the generous sea,
The corn and fruit of the glorious land,
Whence all these treasures be!"

After the music, Judge Wilmot rose and spoke as follows:—

"Ladies and Gentlemen,

"I fear the transition from music and song to the plain prose which I am to furnish as my portion this evening, will seem to you abrupt and unsatisfactory. You must expect no formal lecture from me. I never lectured in all my life, and cannot now attempt it for two sufficient reasons, first, I cannot write, and, because next, if I could, I cannot read; and indeed, who would read and give his eyes to paper when they might enjoy the privilege of resting upon the more attractive faces of such an audience as I have now before me. You must be content then to accept from me a humble speech on the subject of our own good country.

" 'In ancient times the sacred plough employ'd
The Kings and awful fathers of mankind:
And some, with whom compared your insect tribes
Are but the beings of a summer's day,
Have held the scales of Empire, ruled the storm
Of mighty war; then, with unwearied hand,
Disdaining little delicacies, seized
The plough, and greatly independent lived.'

"But there are those who tell us ours is not an agricultural country, who refuse to believe in its agricultural capabilities, and who will not believe me when I produce statistics which are here before me and to which I invite examination and challenge contradiction to establish that the value of agricultural labour in the year 1851 in this province of New Brunswick equalled the enormous sum of £1,692,000, which at six per cent. is the interest of £28,000,000. Yet astonishing and demonstrative as these facts are, there will still be unbelievers—men who will shut their eyes against the great array of witnesses gathered together in the Hall of the Exhibition, and showing a collection of agricultural productions which cannot be surpassed in any portion of the world.

"Is it any marvel that the world is ignorant of the resources of our country, when there are so many who are ignorant among ourselves? One good result of the labours of the New Brunswick Society will be to make us justly known abroad. And it is high time the ignorance of our character and the character of our country was dispelled. Not long since, a person who married in this province visited his friends in Britain, and when the subject of his colonial connexion was referred to, it was with regret that 'he had not waited till his return, so that he could marry a white woman.' As another illustration of this ignorance I may mention that an English gentleman, who fancied himself by no means deficient in intelligence, asked a Provincialist, who happened to be in England, 'how far it was from Halifax to Nova Scotia?' Again, a more painful, a more humiliating evidence of this prevailing ignorance is to be found in the book of geography, published by the National Society of Education, in the year 1849, in which it is cooly stated that the chief rivers of this province are the St. John, the Shubenacadie, and Annapolis, and also adds that the chief employment of the people is in rolling logs down the banks through the winter, and taking them to Halifax in the spring. Out upon such ignorance and misrepresentation! Why, we have lakes in the interior which would swallow three Nova Scotia rivers. But the worst is, we disparage our own resources. We did so at the World's Exhibition, when New Brunswick was represented by a lump of asphaltum, the figure of an Indian, and a bark canoe. This disparagement is as unjust as it is unpatriotic, for we may safely pit New Brunswick against any State in the Union for weight of wheat, bushel for bushel; and some of you will be surprised to learn that with all the boasted fertility of their grain-growing States, they only produce fifteen bushels per head in the United States, while we, unknown and dejected as we have been, are growing 12, and that while they grow but 5½ bushels of potatoes per head, we grow 14⅝. We are ready to enter the lists with them for fair competition, and leave to them to name both time and place.

"Then we can beat them easily in raising beef, for in grass, potatoes, turnips, and oats, we entirely outdo them both in quality and quantity. With a free admission for Provincial beef in the United States' markets, our County of Westmorland would send them more beef before many years then would equal in value all our present exports.

"Now, if New Brunswick is not an agricultural country, where is one to be found? Some samples of our Gloucester wheat were sent, a few years since, to Britain, and so surprised the corn-brokers, that a sheaf had to be forwarded to satisfy them that all the grains had not been picked. True it is our farmers have their difficulties—and other farmers in other countries have theirs—they are common to every country—flies and rust injure wheat elsewhere as often as in New Brunswick, and the blight has destroyed other people's potatoes as well as ours. The immense importance of agricultural success to national prosperity is shewn in England by the anxiety with which every indication of fair or unfavorable weather is watched, not only by the agriculturist, but by the merchant and the statesman. One week of bad or good weather, at a critical season for the crops, will affect the markets of the world.

"There is no ground for discouragement or dissatisfaction with our country—there is no necessity for emigration from it. New Brunswick possesses a wealth in her potato fields superior to the gold fields of Australia, and our winters are infinitely better than their droughts. Much has been said about and against our winters—much that is exaggerated and untrue. Why, cold as they are, they are healthy—fertilize the soil—make us good and easy roads and bridges, and do us much good service. Who that knows New Brunswick would have a New Brunswick with no snow?

"Our farmers are improving, and they will improve. They will cultivate a smaller surface of land, and work it better and more advantageously: they are progressing with the intelligence and improved facilities of the age. We hail their improvement and prosperity with satisfaction, because it is identical with the improvement and prosperity of our country. Agriculture feeds us, and in part clothes us—it is the central pillar, which is the chief support of all Provincial enterprise and success.

"The New Brunswick Society, whose representative and organ I have the honor to be tonight, has made the improvement of our domestic manufactures an object only secondary to the paramount interest of agriculture. Believing with Lord Bacon that the essentials of national prosperity are those to which I shall presently allude, the Society have spared no effort or encouragement to draw out the ingenuity of our home mechanics, and seduce them into new and valuable fields of labor. And nobly have the manufacturers of New Brunswick responded to this invocation! Their industry and ingenuity is attested on the tables and shelves of the Exhibition, which demonstrate to every fair and intelligent observer that there is nothing deficient in the skill of our mechanics. But they are exposed to a severe and prejudicial competition with those who supply the markets of the world, receive the orders of millions, and enjoy all the vast facilities of machinery —what we want is neither industry nor skill; we want increased demand and larger markets for the products of our mechanical labour. Many of the articles exhibited by our mechanics would have been received with favor at the World's Show; but I will not, as I ought not, attempt to discriminate at this time.

"Lord Bacon's third essential is, easy means of conveying men and commodities from one place to another. And here I must remind our friends from a distance that, honorable and satisfactory as the present Exhibition is on all hands acknowledged to be, it is by no means a just illustration of all the capabilities of New Brunswick, for, if we enjoyed the rapid and cheap modes of inter-communication familiar to our western visitors, this show would be vastly larger—more varied and more creditable. But in this very matter there is land ahead. The glorious vision of the Portland Convention is about to receive its realization—the pathway of the world is to cross our country—men and commodities are to have easy way assigned them—the day of Railways, of rapid progress and development is opening auspiciously before us. It is objected that in these remarks I am venturing too near the party ground of politics which, as a judge, it is my duty to avoid. If so, I answer, it is a sort of politics which touches the nearest interests of my native land, and from which I will never be deterred. I would, indeed, I might enact the judge tonight in this question of Railways! I am sure the intelligence and patriotism of such a jury as is now before me would neither cavil nor hesitate with the doctrine of my charge; and that by common consent, we should find in favor of a Railroad. (Cheers.)

"We have some old fashioned folks among us who have kept themselves out of reach of the age, and don't know the good of Railroads: pity they couldn't go elsewhere and see, and save themselves from the contempt which belongs to an ignorance alike unfortunate and irrational. Why, I venture to prophecy that the very day which witnesses the completion of the Railway contract will see the real estate of the Province increase in value fifty per cent! Yet there are those who have opposed, and will oppose all railroads that do not pass beside their doorsteps. Some of these people would remove the St. John river if they had their way; and many of them, certainly, if they had been consulted, would have opposed its running where it does.

"Now, in the development of Railway enterprises, Engineers will be re-required. Where are they to be found? The schools of the province do not furnish them—and even these, defective as they are, are not attended as they should be. It is a lamentable, a degrading fact, that there are 34,000 children between the ages of 6 and 16 years in New Brunswick who attend no school, and only 18,000 who do.

"It is unpardonable that any child should grow up in our country without the benefit of, at least, a common school education. It is the right of the child. It is the duty, not only of the parent, but of the people: the property of the country should educate the country. All are interested in the diffusion of that intelligence which conserves the peace and promotes the well being of society. The rich man is interested in proportion to his riches and should contribute most to the maintenance of schools. Though God has given me no child of my own to educate, I feel concerned for the education of those who do possess them. I feel concerned in what so intimately touches the best interests of our common country. I want to hear the tax collector of schools calling at my door. I want the children of the poor in the remote settlements to receive the advantages now almost confined to their more fortunate brethren and sisters of the towns. I know that full well God has practised no partiality in the distribution of the noblest of his gifts—the intellect; I know that in many a retired hamlet of our province—amid many a painful scene of poverty and toil—there may be found young minds ardent and ingenious, and worthy of cultivation as the pampered children of our cities. It is greatly important to the advancement of the country that these should be restricted.

" 'What constitutes a State?
Not high-raised battlement and laboured mound,
Thick wall and moated gate;
Not cities proud with spire and turret crowned;
Not bays and broad armed ports;
But men—high-minded men—
These constitute a State!'

"In this all important subject of public education, we have lately made a step in the right direction. Our Legislature has for many a year been liberal in its appropriations for this great object. Twenty years ago we appropriated more money for the support of schools than was given for the same purpose in England. Still the bugbear of taxation is the resort of quack politicians, but I confidently trust the time is near us when the wisdom of our law makers will away with this delusion. Let our Legislature be as intelligent and firm as they are and have been liberal, and soon the light of knowledge will irradiate the darkest corners of our country.

"A false impression has been fostered among us to the effect that talent and education are misapplied or degraded when they are employed in industrial pursuits. If a youth of superior parts or accomplishments is discovered, it is at once suggested he must be a Lawyer, a Doctor, or a Parson. Yet agriculture and the arts afford the finest field for the exercise of genius and of cultivated intelligence. Some of our best and finest intellects are now engaged in farming our soil or prosecuting our manufactures. We are amply, nobly, sufficient to ourselves in mind and in material production—all we need is education—this we must have—and our success is sure. Need I refer you to the illustrious and encouraging example of the noble fruits of genius, education and industry, in the story of Sir Joseph Paxton—the poor gardener's boy—the plodding laborer, toiling with mind and arm—becoming the architect of the magnificent Palace of the World's Industry—receiving the plaudits of his country and of all countries—earning and wearing the just honors of his sovereign, and becoming associated with the record of the most glorious and philanthropic enterprise of this glorious and philanthropic age."

Dr. James Robb who was the secretary of the New Brunswick society during most of the five years of its life, was a most indefatigable and enthusiastic worker in the interests of New Brunswick agriculture. He was one of Prof. Johnston's travelling companions when the latter made his trip over the province to secure data for his report and he proved a most capable and energetic secretary for the new society. He seemed to have already grasped the idea that farmers shall have an education more closely related to their own particular calling and that this education should begin in the elementary or common schools of the country. He anticipated Farmers' Institutes and Farmers' Clubs and in one of his reports suggested a hundred subjects for discussion at such gatherings. That no Farmers' Club or Institute may be without a question for discussion I transcribe these subjects and also a report of some remarks made by Dr. Robb in submitting then to the annual meeting of the Society.

Dr. Robb said that there are in the history of nations as in the lives of individuals certain events more remarkable than others which lead them to consider and reflect upon their real state and position, and that distress and difficulty will thus frequently force them to a wiser and better course of conduct for the future.

It was true for instance that the Potato rot, which at the time was regarded as one of the greatest evils that could befall Ireland, had now given to that country a more enlightened set of Landlords and had taught the tenants a better system of Agriculture.

The failure of our own crops—and the altered policy of the Mother Country in regard to the Timber duties, had driven the people to consider the true basis of their prosperity, apart from the protection afforded to them by the commercial policy of the English Government, and obliged them to give up in great part those uncertain lumbering pursuits in which they had been engaged for the more certain and useful occupation of tilling the land: the people had thus discovered that unless they gave greater skill and attention to the Agricultural resources of the country, ruin and confusion must ensue.

In order to aid in placing the great permanent and abiding interest of the people upon a better foundation, County and Parish Agricultural Societies had been established in many different parts of the province, and now this Central one, professing to be guided by the same principles, but more extensive and general in its operation, had been called into existence.

One of the objects of this Society had been to train the minds of the farming community to a better acquaintance with the principles of the art in which they are engaged. Without skill all labor is useless. A special education for the farmer had hitherto been denied, and until that was secured for them they could not expect to practice their business with honor or pleasure or profit. Among the many ways of instructing the minds of farmers, meetings or clubs for the special discussion of agricultural subjects have been found to be of very great importance and utility. It might be said that Farmers' Clubs existed already in the country, but the existing Agricultural Societies, with hardly an exception restricted themselves to the award of premiums for the best crops, and farm produce: the competition thus engendered does good no doubt to a few, but the discussion of the individual experience is almost wholly overlooked at their periodical meetings. Accordingly he wished to urge the importance of these objects and to recommend the formation of Farmers' Clubs in every county and parish of the Province, or the engrafting of them upon the existing Agricultural Societies. It was not for the purpose of gossip he would recommend these societies—there was no difficulty in conducting them in a grave and business like manner so as to elicit and disseminate very much useful knowledge upon Agricultural matters.

It might be said that such a system was too difficult for a new country like ours, but, this he did not believe, it was almost as easy to work such a system as to talk about it. All that was required was the adoption of a simple constitution and the appointment of a Chairman to preserve order, and a Secretary to record the proceedings: if one was established other would soon follow. He then said that a printed form of constitution of such clubs, and a list of subjects to be discussed might properly be prepared and published by this Society, so as to assist their first beginnings. He called upon the members of the Legislature then present and all friends of Agriculture in New Brunswick to lend their aid in organizing such clubs on their return to their own respective districts.

If it were said that there were few subjects on which farmers could occupy a whole evening he would beg to ask whether less than one evening's discussion could enable any meeting of farmers to arrive at clear conclusions in regard to

Agricultural Education,
Common Schools,
Agricultural Libraries,
Agricultural Lectures,
Agricultural Periodicals,
Agricultural Bureau and Inspector,
County and Provincial Societies,
Measures of Government for improvement of agriculture,
Improvement of roads and means of transport,
Provincial Show and Fair,
Local difficulties,
Local advantages,
High Farming and Plain Farming,
Drainage, superficial and deep,
Drainage by stone, tiles, slabs, poles, &c,
Deep ploughing,
Effects of Frost,
Lime and Plaster effect and advantages, marl, &c,
Portable manures; bone dust, guano, salt,
Soils and Sub-soils of District,
Bog-earth, its application,
Compost; preparing—preserving,
Manures, saving, application and construction of heaps, &c,
Manures, fermented and unfermented,
  do. liquid,
Keeping farming accounts,
History of Breed of Stock in District,
Fencing,
Breeds most suited to district,
Improving breeds,
Importing Stock, and condition on which Bounties should be given.
Use of Linseed meal and Oil Cake,
Keeping of Sheep,
Keeping of Poultry,
Management of Orchards, Gardens, &c,
  do. Pasture Lands,
  do. Dairy,
  d. Bees,
Spade Husbandry,
Preservation of Root crops,
Culture of Turnips,—Hay,
  do. Carrots, Parsnips, &c,

Wheat Culture,
Economical keeping of Farm Horses,
Diseases of cattle, swine, poultry, &c,
Pruning of trees,
Planting and transplanting of trees,
Fall or Spring manuring—top dressing,
Renovation of exhausted land,
Protection of animals from cold,
Profit of fattening cattle,
Horses versus oxen,
Farm tenancy,
Potato Disease,
Wheat fly,
Seed Potatoes,
New articles of culture,
Slicing turnips, cutting Hay and bruising oats,
Rotation of crops,
Broom Corn,
Stumping Land,
Treatment of New land,
Manufacture of Ashes,
do. Maple Sugar,
Culture and weaving of flax,
Irrigation and warping,
Culture of corn, and uses of,
Influence of fishing on farming,
do. Lumbering, do.,
Premiums for County Agricultural Society,
Measures of Provincial Agricultural Society,
Manufacture of Potato Starch,
Culture and uses of Peas and Beans,
Steaming food for cattle,
Improvement of cheese,
Industrial resources of vicinity,
Advantage and disadvantages of climate,
Markets foreign and local for agricultural purposes,
Effect of Bounties on Agriculture,
do. Tariff do.,
Green Crops for manure,
Ground fallow.
Insects hurtful to vegetation,
Curing of hay,
Root crops for stock,
Winter work for farmers,
Farmers Bank,
Growth of Hops,

Disposal of Crown lands,
Modes of settling immigrants,
Places for do.,
Procuring a supply of labor,
Average crops and profits of farming alone,
Curing and putting up of Beef, Pork, Butter, &c,
Selection and steeping of seed,
Improvement of Seed wheat, &c,
History and growth of Settlements,
Construction of barns, &c,

The next step taken after the lapse of the New Brunswick Society was made at the Legislative session of 1856, when a commission of five was appointed to suggest any improvement it might deem advisable in the application of the present grants to agricultural societies or to other objects likely to produce more permanent and advantageous results to the agricultural interests of the province. In July 1857, the report was placed in the hands of the governor, signed by the following who constituted the commission :

JAMES ROBB,
GEORGE KERR,
CHARLES PERLEY,
GEORGE G. HATHEWAY,
HUGH McMONAGLE.

This document bears evidence of hard thought and personal effort on the part of the commission, to bring together information that would be beneficial to the farmers. It also gives us another glimpse of the untiring zeal of Dr. Robb, who was the chairman.

The first work the commission did was to send to fifty-eight of the leading farmers and prominent men in the different counties, the following ten questions :

QUESTIONS.

1. Of what results have the agricultural societies been productive in your District ?

2. Can you give any information to illustrate your opinions and views ?

3. What do you think of the establishment of a Central Board of Agriculture, and of its relations to the local Societies ?

4. What is your opinion upon the subject of the establishment of one or more Model Farms in the Province ?

5. What do you think of the establishment of the Office of a Superintendent of Agriculture for the province, with or without a Central Board.

6. Do you suppose that the introduction of suitable Agricultural works for reading in the Commons Schools by the Children of the country, would be useful ?

7. Do you suppose that Agricultural instruction could be beneficially introduced into the higher Seminaries of Education ?

8. What is your opinion of the general condition of Agriculture in your neighborhood, or in the Province?

9. Can you give any information to illustrate your views?

10. What measures would you yourself suggest for the advancement of Agriculture?

In the summary of the answers the commission says: "It is somewhat difficult to arrive at the direct meaning of some of the writers quoted, but the general sense may be taken to be nearly as follows."

I. Results of Societies.

Beneficial,	32	
Useless	4	
Uncertain,	22	
	—	58
Majority in favor of Societies,		10

II. Central Board.

Beneficial,	21	
Useless	15	
Uncertain,	22	
	—	58
Majority for Board,		6

III. Model Farm.

For,	32	
Against,	12	
Uncertain,	14	
	—	58
Majority for Model Farm,		20

IV. Superintendent.

For,	22	
Against,	18	
Uncertain,	18	
	—	58
Majority for Superintendent,		4

V. Agricultural Books in Schools.

For,	42	
Against,	5	
Uncertain,	11	
	—	58
Majority for Agricultural Books in Schools,		37

VI. Agriculture in Seminaries, Colleges, &c.

For	33	
Against	6	
Uncertain	19	
	—	58
Majority for Agriculture in Colleges, &c.		27

VII. State of Agriculture of County.

Favorable	23	
Unfavorable	15	
Uncertain	20	
	—	58
Majority		8

After giving the answers to the above questions a due measure of thought, the commission recommended to his Excellency's attention the subject of a Model Farm to be established on public account ostensibly for the special use of the agricultural portion of the community but really for the direct furtherance of the material prosperity of the province at large. The commission also recommended that a provincial Board of Agriculture be brought into operation and placed in such a position as should enable it to give a new and vigorous impetus to the progress of agriculture.

In section 22 the commission says: "The chief objection to a Model Farm is probably the local character which it must necessarily have. The commission would gladly see more than one such establishment, in fact one in every county, but the expense is too great and the experience of one will test their merits and adaptation to the circumstances of the case. In the meanwhile, the benefits of the stock will be felt in a few years throughout the province and take away the force of the objection hinted at."

At that time the government did not make any serious effort to carry out these recommendations, but twenty-five years later, after the Provincial Farmers' Association had made a similar request the government started a stock farm—intended to be a Model Farm in that particular line—and operated it for a few years. This farm was located in Kings County. "Model Farm" station, on the I. C. R. was made for its accommodation, and was named after it. Several adverse influences resulted in its being abandoned after a few years' experience by the government. Among these influences was the expense of maintenance, its unfortunate location, and the decision of the general government to establish a Central Experimental Farm at Ottawa, and four subsidiary farms in the provinces, one of which would come to Eastern Canada.

The suggestion of the commission to form a Board of Agriculture was accepted and carried out, and the Board then formed in conjunction with the government held provincial exhibitions and looked after the agricultural interests of the province until it was somewhat summarily abolished by the government in 1875. The farmers resented in some degree the action of the government in doing away with the agricultural board and possibly this act had something to do with the invitation issued by W. D. Perley, Esq., in 1876, to the farmers of the province to meet in convention at the Court House in Sunbury, in order to discuss the action of the government in relation to the board and advisability of forming a Farmers' Association for the whole province, and farm matters generally. The leaven had gradually been working among farmers that the business was not conducted on business principles; that they were not learning from each other as much as was desirable, that instead of co-operation there was too often isolation, and that judging from the fact that but few farmers found their way into the legislature, the government was ignoring or overlooking the agricultural interests. With these sentiments prevailing to a considerable extent, Mr. Perley's invitation was loyally responded to, and there was a large attendance at the convention, a majority of the counties in the province being represented. Speeches were made, papers were read, discussions held, and before the convention adjourned a society was formed called "The Provincial Farmers' League". This society is still in active operation and is doing good work. The name, however, has since been changed twice, first to the "Provincial Farmers' Association", and then to "The Farmers' and Dairymens' Association of New Brunswick." The plan of the Association was to hold an annual meeting at different centres in the province, and the idea was for a number of years very successfully carried out. Most of the problems in agriculture that are facing the farmers today were discussed at these meetings with an enthusiasm and an earnestness that was inspiring. The delegates were entertained by the farmers and others in the immediate neighborhood of the meeting. Usually one session was given over to a social gathering in which the delegates and people of the community joined and there were refreshments followed by toasts and speeches to the apparent enjoyment of all.

In all the meetings of the society, representatives of the press were in attendance and contributed their full share to the success of the organization. The late Robert Payne was one of the newspaper men who took a great interest in the movement and by keeping the affairs of the society before the public did good service in helping it along. The presidents of the association between the years 1877 and 1895 were: James E. Fairweather, Samuel Sharp, W. D. Perley, S. L. Peters, Howard Trueman, S. J. Calhoun, G. W. Hobert, E. B. Beer, H. Humphrey, W. M. Shaw, J. L. Inches, W. J. Owens, Thomas A. Peters, Thos. A. West, George Baxter. Some of these gentlemen filled the position of president for more than one year. Mr. Peters filled the place for three years in succession. The secretaries during the same time were: S. L. Peters, (three years following each other), Howard Trueman, O. R. Arnold, (three years) O. E. Flewelling (two years), H. B. Hall, (three years), Peleg Smith, T. J. Fletcher, W. W. Hubbard, (several years), C. L. S. Raymond, W. A. Wilmot, (several years). The centres where the annual meetings were held during the time specified were: Hampton, Sackville, Hamstead, Sussex, Sackville, Riverside, Burton, Hamstead, Sussex, St. John, Fredericton. Since 1889 the regular annual meeting has been held in Fredericton, excepting in 1903, when the experiment was tried of dividing the meeting or cutting it in two, and that year the three first sessions were held in Woodstock and the last three in Sussex. This plan was not considered a success, and since that time the annual meeting has been held as formerly at Fredericton. Semi-annual conventions have been held for a number of seasons during the summer months. Most of these have been held in the River counties. To give an idea of the kind of work performed by the association during the earlier years of its history I have transcribed the minutes of a meeting held in Sussex in the winter of 1880.

THE FARMERS' PARLIAMENT: FOURTH ANNUAL SESSION.

The fourth annual session of the Provincial Farmers' League opened at Sussex, Wednesday, 4th inst., in Victoria Hall, W. D. Perley, Esq., President, in the chair.

There was a large attendance, the following gentlemen being present: W. D. Perley, Maugerville, president; S. L. Peters, Hampstead; Thos. Roach, Sussex; E. B. Beer, do; W. F. George, Westmorland; Thos. O'Donnell, Cambridge, Queens Co.; I. B. S. Raymond, Norton; George Hoben, Burton; Sunbury Co.; Howard Trueman, Westmorland; Amasa Kennedy, Millstream; Thomas Pickard, Sackville; H. Humphrey, Sackville; G. A. Sterling, C. B. Harrison, Fred Harrison, Maugerville; Charles L. Slipp, Hampton; Elisha Slipp, Jacksontown; G. L. Slipp, Sussex; John Slipp, Apohaqui; Silas Raymond, Central Norton; Isaac Bunnell, Wm. Marshall, Sussex; S. B. Belding, Hampton; H. Teakles, O. Hayes, Geo. Dobson, Silas McCully, Sussex; D. W. McKenzie, Westfield; J. T. Dobson, Sussex; Geo. Creel, Hants, N.S.: Chas. K. Leonard, Chas. K. Leonard, jr., Cambridge; L. Estabrooks, Prince William, York County; A. B. Hayes, Norton; Chas. McGibbon, Douglas; George Wallace, E. M. Sharp, Fraser Fox, Isaac Fox, George L. Colwell, Dr. Vail; Coun. Nixon, Rothesay.

The following were announced as the subjects for discussion:

1st—Is it desirable that a Model and Experimental Farm should be established in the Province?

2nd—Associated dairying, with a view to securing a better article of butter.

3rd—Drainage: Its advantages and importance in connection with our Provincial agriculture.

4th—Fruit and fruit culture.

5th—What crops can be fed with the greatest advantage and profit in fattening beef cattle?

6th—New Brunswick as a beef producing country.

7th—What breeds of sheep are most suitable for New Brunswick, and will sheep-raising prove profitable?

8th—The importance of the wheat crop to New Brunswick, and the best method of cultivation.

9th—The management of manures in winter, and their application to the soil in order to secure the best results.

SENATOR W. D. PERLEY.

10th—The benefits arising from the application of lime to the soil.

11th—The manufacture of sugar from the sugar maple.

12th—What amendments are necessary in our Provincial Statutes relating to agriculture ?

MORNING SESSION.

The meeting was called to order at 11 o'clock by the President, W. D. Perley, Esq., of Sunbury, who made a few appropriate remarks. He said he was glad to see that the Society, commenced in a small way in Sunbury four years ago, had not been forgotten, but had risen to power and affluence. The objects of the Society were good, although not understood by some. They met to forward the interests of the agricultural industry of the Province. Agriculture was the main st ay of our country today—a fact which was becoming more generally recognized every day. In proportion as we bring intellect to bear in its pursuit, a more important factor will it become in the forwarding of the prosperity of the country. He referred to the subjects set down for discussion, and spoke of the words of the president of the York County Association, who had said that it was not the brains the societies wanted—they have that—but what they wanted is capital, and while admitting this, he held that intellect was needed to guide that capital. What they wanted was more knowledge, and it was obtained by such meetings as this, where men of many opinions and from different parts of the country met and discussed subjects of vital importance to themselves and the country. Ideas were exchanged, and all received and imparted information. We can raise sufficient crops to supply—and even more—the markets of our country. Now is the time, if the government would aid a deserving people, they will come to the rescue by establishing a line of steamers between here and the old country, for many farmers would then ship their supplies, and be encouraged to increase their cultivated area. He concluded, amid applause, by declaring the meeting open for business.

The following delegates then filed their credentials:

Sackville and Westmorland Agricultural Society—Howard Trueman and Thomas Pickard, and W. F. George and Hiram Humphrey, Westmorland, Vice Presidents.

King's County, Sussex and Studholm Societies—Thos. Roach, R. C. McLeod, A. Kennedy, O. R. Arnold.

King's Central Society—A. B. Hayes, I. B. S. Raymond.

Sunbury County—G. W. Hoben, Chas. Harrison, W. D. Perley, G. A. Sterling, Fred Harrison.

Queen's County—George L. Colwell, Thos. O'Donnell, Israel Slipp, Isaac F. Fox, S. L. Peters, Fraser Fox.

The minutes of the previous meeting held at Hampstead, Queen's Co., were read and confirmed.

SECRETARY'S REPORT.

The Secretary, Mr. S. L. Peters, then read his annual report, which was received with every evidence of pleasure and satisfaction:

Mr. President and Gentlemen:

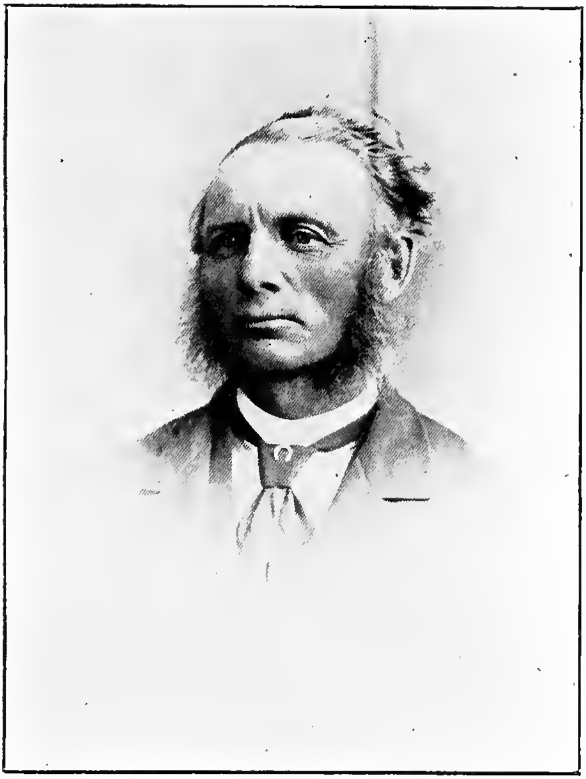
Permit me to offer my hearty congratulations to you on the very happy auspices under which we are assembled. As co-laborers together we meet to renew our acquaintance with each other; to speak words of encouragement and cheer; to discuss questions which materially affect our interests, and by an exchange of views on the different subjects which may arise, determine what is best in the interests of agriculture, not only as affecting our farmers but every resident of the province. I feel assured that all classes of our fellow citizens will give to every effort made having a tendency toward the greater development of the agricultural capabilities of the Province their hearty approval, and interested as they must be in the successful prosecution of our Provincial agriculture, it will be natural to suppose that the deliberations of this body of agriculturists will be watched with interest.

The constant toil and labor of seed time and harvest is providentially followed by one of comparative leisure and during our winter months opportunities are afforded to increase our knowledge by careful study and research, so that we may be better fitted to discharge our duties to our country and ourselves. Ample time is also afforded to study the most approved methods of culture, as recommended by our best writers in practical agriculture; to scan the operations of the past year, and make a note of our failures as well as our successes.

PROVINCIAL AGRICULTURE.

With reference to our Provincial agriculture, our people are learning the fact that upon the capabilities of our soil and a proper system of cultivation rests to a very great extent the general welfare of the Province. With reference to its capabilities, we have abundant proof from year to year as reports reach us of the large yield per acre of lands under good cultivation; and also by corroborative statements of gentlemen who have had opportunities of comparing our soil with that of other countries. There appears to be no question as to its productiveness, while the proper system and method of cultivation is an open question and well worthy of the careful study and consideration of our best agriculturists.

Situated as we are, on the seaboard, in possession of one of the finest winter ports in North America, in easy access to Halifax, the present winter port of the Dominion, for the shipment of cattle by the Allan Line, we certainly possess advantages over the Western Provinces in marketing such of our products as meet with ready sale in the English markets. In proof of this I may refer you to the reports of the English farmers who visited the Dominion last summer (at the request of the present government) with



S. L. PETERS, QUEENS CO., N. B.

a view to examine for themselves the extensive and fertile lands of the Western Provinces of our Dominion, and who, previous to their departure for the Mother Country, visited the Maritime Provinces. In their reports I find very favorable references to New Brunswick as a grazing country, and as enjoying a fine position for the fattening of beef cattle for the English market. It is also a fact that may not be generally known that several farmers from Ontario have visited this province with a view of locating themselves in order that they may more successfully prosecute this branch of agriculture. Considering the very extensive trade in beef cattle which is going on between this continent and England, and in view of the fact that it is likely to be a permanent business, the question is one of much interest to the farmers of New Brunswick as to what extent they can participate in the trade. From the facts already stated, it would appear that we have advantages in soil and location, and with little difference against us in climate as compared with our Western Provinces. It is just possible that the greatest drawback towards its successful prosecution will be the want of capital. This, however, we believe, can be fully met by associated effort, or by the course pursued by some of our leading farmers at present, who, if we are correctly informed, depend upon our stock raisers for the cattle they require to feed for the markets. I may be excused from referring to this matter at greater length, as the subject will be fully discussed at this meeting. There is another and I believe more important question, to wit, the meat and cattle trade as now carried on between this country and England. It is well known that large numbers of sheep are sent to the English markets from the Dominion, and although our own Province has not participated in this trade to any great extent there would appear to be no reason why we should not take advantage of it.

The breeding of sheep and fattening them does not require so much capital as the cattle trade requires, and is therefore suited to the circumstances of farmers of moderate means. There could be no question as to the result, and there are good reasons for believing that sheep farming will pay as good if not better than cattle raising.

Our Province is well suited for the raising of sheep, and as our own woollen factories are constantly increasing the volume of their productions to enable them to meet the increasing demands for their goods, our farmers will meet with a ready sale for their wool, and should as far as possible supply the raw material required.

CROPS.

The past season has proved very favorable for the growth of the various kinds of crops cultivated. The early frost, however, did considerable damage in some localities to buckwheat, which proved the most serious drawback of the season. Wheat, as was predicted in our last report, was much more extensively sown than the year previous, and the yield per acre greater. The total yield for the province last year is by a careful gentleman estimated at 700,000 bushels. Our farmers are satisfied with the results and express a determination to sow a greater breadth the coming season. Other grains have given an average yield and been cultivated to about the usual extent. Potatoes were planted to a much greater extent than usual and were an abundant crop. There has been but little demand and consequently low prices, and farmers are feeding them to their stock. A few cargoes were shipped to England, which, we understand, were remunerative. A very great want is felt in not having any reliable crop statistics for the Province. It is quite impossible to get anything near the quantities of agricultural produce grown in any one year, and no reliable calculations can be made as to the increase or decrease in any one year over that of another. It seems to be a great pity that we should be in this position, when a very moderate expenditure would secure to the Province this valuable information. In view of the necessities of the case, I would suggest that this association present a memorial to the Governor-in-Council, praying that such legislation as may be required to secure this very desirable object may be had during the sitting of the Legislature this present year.

In my last report I ventured to call attention to the manifestly unfair advantage the citizens of the United States had over our own people in the arrangement of the tariffs on agricultural produce. That while the Dominion admitted their produce for 10 per cent. on its value, we were charged 33 per cent. to enter their markets. The action of the Dominion Government in this matter is understood to give very general satisfaction to the farmers of the Province, as under existing legislation our home markets will be supplied by our own people. We have been too long throwing our resources into the hands of those who will not reciprocate our wish to meet them on equal terms, and I am sure it was quite time that a remedy was applied. The farmers and manufacturers have interests in common with each other, each requiring the productions of each other, while all other classes reap the advantages of the successful prosecution of either industry. Our country is rich in natural resources and needs only capital and well directed efforts to develop them. The future of our Provincial agriculture does not by any means look unpromising. Every observant person must notice that a change is gradually and surely taking place. Agricultural interests are now looked upon as the hope and stay of the Province; and our farmers have greater confidence in the capabilities of our soil to produce all that is required of the necessaries of life to supply the wants of the people than formerly.

The yield of wheat, the great staple article of food, has been increased from 203,911 bushels in 1871 to 700,000 bushels in 1879, and bids fair to reach much larger proportions in 1880, and farmers are already beginning to feel that the days of going to the city and village grocery for their supply of wheat flour is happily drawing to a close. Tens of thousands of acres of fine wheat producing lands within the limits of our Province await the active settler. A portion of these lands which are under control of the Crown Land Department may be had under the Free Grants Act, while other portions of them, owned by the New Brunswick R. R. Company, can be secured for a nominal sum and with easy payments. (He then read figures showing that in the different parishes of Restigouche County there are 20,900 acres of land which comes under the Free Grants Act; in Gloucester, 18,500; in Northumberland, 24,600; in Kent, 7,500; in Charlotte, 4,747; in Carleton, 19,807; in Victoria, 29,500; in Madawaska, 7,803. There is also in the County of Kent, Adamsville Settlement 4,000 acres, and in Peltona Settlement, lying in the Counties of Sunbury and York, 8,000 acres; a grand total of 145,357 acres). Or, in other words, the Province offers to 1,453 men of the age of 18 years and upwards (who do not now own any real estate), 100 acres of land each free of any charge whatever; the only conditions to be complied are simply that the applicant shall chop down, cultivate and clear not less than ten acres in three years, build a small house and continue to reside there and cultivate the land. We take it that these conditions are really necessary to the welfare of the settler, and such are not burdensome.

It is pleasing to note the progress made in these settlements, and the general satisfactory results obtained from the cultivation of the soil. With these very liberal offers the question may be asked, "Why is it that those who fail to secure employment in our cities and towns do not accept these conditions and make for themselves homes, where, after the first two years, they can live comparatively independent?" While there are many other matters of interest to which I should like to refer, yet as they would occupy more time than could reasonably be taken in a written report to be read here, I will conclude by expressing the desire that the action taken by this Association with different subjects which may be considered at this meeting, will prove advantageous to the important interests with which every member of this body stands closely identified; and that our visit to this beautiful locality and hospitable houses of its inhabitants, will be to our mutual advantage and profit.

Respectfully submitted,

S. L. PETERS,
Secretary.

Mr. Trueman moved, seconded by Thomas O'Donnell, that the report be adopted. In making the motion, he said he had no objection to it, except that part which had a political bearing.

This was the opinion of Messrs. George and Pickard.

Mr. Pickard moved in amendment that it be adopted as the opinion of the Association, with the exception of the political portion.

Mr. I. S. B. Raymond wanted to know if they could get along without Protection. He did not think they were justified in cutting out this clause.

The amendment was then put and carried.

Mr. E. B. Beer suggested that the bye-laws be read over so that any present who were not familiar with them could speak on any question without getting entangled.

This was put off until after dinner.

CORRESPONDENCE.

The secretary read a memorial to the Legislature, requesting an amendment of statutes in regard to agriculture in this Province; and asking that a similar law be enacted as in force in Nova Scotia. He read letters from the Hon. Provincial Secretary in regard to this matter, promising to lay the matter before the Governor-in-Council; one of them stating that the Nova Scotia law was not suitable in its entirety for this province; but that the Government would do all it could to further the interests of agriculture in this province. He also read a number of other letters in regard to this matter.

Messrs. Pickard, Humphrey, Sterling, Arnold and Trueman were appointed to select the subjects for discussion, as it was considered there were too many to admit of all being properly discussed.

Adjourned until 2.30.

AFTERNOON SESSION

At five minutes to 3 o'clock the meeting was called to order, the president in the chair.

Mr. H. Trueman then read his paper, touching upon many subjects set down for discussion.

Never in the world's history has public attention been turned so much to agriculture, and especially in Canada. Everything is done to give a growing interest in farming. The principal cause of a growing interest is the opening up of the world's markets. Steam has been called in, and the most perishable fruits, etc., can be placed on their tables. While the markets are opening there are competitions; but we have the advantage of being Anglo-Saxons who have energy, which is in our favor. Against us, are want of capital and want of self-reliance. Capital is not so scarce as might be thought by a stranger. It should be remembered that capitalists have invested in shipping, mining, etc., which gave good return, but did not greatly improve the country, as agriculture would have done and perhaps have been a paying thing in the end. All we lack, said one of the Scotch delegates, is enterprise and stability. The examination of market prices for thirty years back would not encourage the investment of capital in farming. We do not want in enterprise; we shipped cattle first by the St. Lawrence, and our shippers are now waiting to get berths for cattle. He spoke of the favorable impression made upon the Scotch delegates, which spoke well for Canada. The subject of the Model Farm was one which the Association should approach cautiously. Advanced agriculture considers these model farms a necessity, while to secure one in its perfection is a difficult task. Mr. Trueman spoke at some length on the subject of the model farm, citing a number of instances. He was of the opinion that a model farm would be of some benefit. He visited one a few years ago in P. E. Island. He was not pleased with the buildings and fences, but the farmers prized its stock. Our Legislature gives money to the Agricultural Societies, and the question is, was it judiciously expended? The government could set apart a certain percentage of these grants to establish a model farm. He advocated the raising of a better breed of horses in this province. In the management and training of horses we are, as a people, wonderfully behind hand. In England and Europe there were studs for the improvement of the stock, and the government might give a subsidy for one such establishment, in, say, each county. He concluded by advising the farmers to be self-reliant and enterprising, and they would have no reason to fear competition (Applause.)

The paper was adopted.

Mr. Trueman said that at the last meeting there was a resolution passed in regard to the raising of sugar beets, and some were to experiment to obtain information. The Telegraph had written the matter up, but when they had assembled at the last meeting to take the matter up, no one knew anything about it. It was a matter of some importance.

The Committee on the matter curtailing the number of subjects reported that they had struck out Nos. 2, 4, 6, 8, 10 and 11.

A vote of thanks was tendered Mr. Trueman for his valuable paper.

THE SUGAR BEET.

Mr. A. G. Sterling reported from Sunbury on experiments made with the sugar beet. Some thirty members of Sunbury Agricultural Society had each planted an eighth of an acre, putting in from 1 lb to 1½ lbs., and it came up all right and quickly. They had found it useful for feeding, easily weeding, and yielding from 25 to 42 barrels to the ⅛ of an acre. The majority were in favor of them, but one who had planted mangolds preferred them to the beets, the yield being greater. He found that it increased the flow of milk from cows, was good for fattening and hogs would eat them. They treated them as they did other roots.

Mr. Harrison (Sunbury) also spoke on the matter and said he was not inclined to go into them extensively. They were very rooty and there was much difficulty in gathering. He got more from the same space sown with mangolds. He would not plant any again. The first cost of raising them was about 50 to 52 cents per bbl. for manure, etc., which would show that there was no money in them at $4 per ton. He was satisfied of this.

Mr. Dobson, of Sussex, said he had one year's experience; that was all he wanted: he would not go into them again.

Mr. H. Humphrey endorsed what Mr. Sterling said. They did not produce as much per acre as mangolds, were hard to grow, and hard to harvest. He would not plant them again.

The Chairman spoke in favor of the beet and said that we should give it a fair trial. The reports that had been handed in to him were not very discouraging. He would advise them to try again. He would suggest that the farmers try again this season.

Mr. Estabrooks said since the Government had gone to the expense of procuring the seed, the farmers might give them and the public the benefit of their experiments in a fair, square manner. Last winter he was in favor of raising the beet and tried it. He had raised 60 bushels. He gave them every chance. They started well, but after they had grown about half the season through, the tops began to wilt away. They were very rooty and hard to harvest. He had come to the conclusion that he would not have anything more to do with them, at the figure of $4 or $5 per ton. By applying the manure which is necessary for one acre of beets to three acres of potatoes, which it will cover well, we raise a good crop of potatoes and the next season we can put in wheat. Surely this is the best plan.

Mr. H. Trueman said he had found the same difficulty in regard to the sugar beets. He had planted four rows of sugar beets, beside a like number of mangold wurtzels, and the latter had produced double the quantity. He had found the sugar beet better than the ordinary red beet for table use.

Mr. Flewelling, of Westmorland, said he had found that mangolds had given 750 bushels per acre; the blood beet 850, while the sugar beet gave only 500. There was another fact—the feeding of the sugar beets tained the milk of cattle; he had found it so.

C. S. Grosvenor, Carleton County, spoke upon their relative value for feed. If we could only raise half the quantity we would be amply repaid, for feeding, especially for milch cows, for which purpose they were worth double. He admitted they were a trouble to raise and to harvest. We should not condemn them hastily. To raise sugar beets in New Brunswick for sugar purposes could not be productive of any gain. They were good for feeding hogs. They did not affect the milk of cows (he said in reply to Mr. Arnold), except to make their milk richer; that was the only deleterious effect. (Laughter).

Reports were next received from those who during the last season had experience in growing sugar beets. It was decided that this variety of beets were not so profitable to grow with the present method of cultivation as either turnips or mangolds.

On motion of William F. George, the meeting proceeded to the election of officers for the ensuing year, which resulted in the following persons being chosen :

President, S. L. Peters, Queens Co.
Vice-President, G. H. Hoben. Sunbury Co.
" " H. Humphrey, Westmoreland Co.
" " L. Estabrooks. York Co.
" " Elisha Slipp, Carleton Co.
" " Thomas Davidson, St. John Co.
" " Charles Harrison. Sunbury Co.
Secretary, Howard Trueman. Westmorland Co.
Treasurer, R. E. McLeod, Kings, Co

Executive Committee.—W. D. Perley; G. A Sterling, C. G. Grosvenor, G. A. McGibbon, O. R. Arnold, A. Kennedy, O. Merritt, J. Slipp, W. F. George, O. E. Flewelling.

Moved by W. F. George and seconded by G. W. Hoben and unanimously carried that the thanks of the Association be given to the retiring president, W. D, Perley, for the admirable manner in which he performed the duties of that office during the term of his election. Mr. Perley acknowledged the vote in a few well chosen remarks.

After a decision to hold an evening session had been reached the meeting proceeded to the discussion of the question: Is it desirable to establish a Model Farm in New Brunswick? C. E Grosvenor, of York, did not claim to be a practical farmer, but was opposed to the idea of such a farm. H. Humphrey, of Sackville, favored the principle and read a paper written by W. C. Milner of Sackville, on the importance of a farm and a school in connection therewith. Mr. Grosvenor explained that he did not oppose agricultural schools or colleges but simply the model farm as he found it in the State of Maine. Thomas Pickard opposed the farm in the present state of the provincial finances, but rather approved of a stock farm. O. R. Arnold took exception to the discussion because Mr. Humphrey did not keep to the question, but turned his attention to agricultural schools. Mr. Arnold talked at some length on the question, showing the difficulties in the way of starting such a farm.

Adjourned to meet at half-past seven.

EVENING SESSION.

The discussion of the Model Farm was resumed. Silas Raymond, the first speaker was followed by G. W. Hoben and S. Estabrooks, W. D. Perley and a number of others, after which the following resolution was submitted to the meeting, moved by Howard Trueman and seconded by Hiram Humphrey:

"Whereas New Brunswick has to compete in the markets of the world with countries in which a better and more practical education is given to farmers through agricultural schools and experimental stations, therefore resolved that this association ask the government of the province to make the necessary financial arrangements at an early day for the establishment of an agricultural school and experimental farm."

Meeting adjourned.

THURSDAY MORNING, FEBRUARY 8TH, 1880.

The Association was called to order by the president. Minutes of last meeting read, and, with some corrections, adopted.

The discussion of the Model Farm and School was again taken up and after a short discussion the resolution before the meeting was unanimously passed.

On motion of W. F. George, and seconded by G. W. Hoben, the following were appointed a committee to bring the resolution before the government: H. Humphrey, Col. E. B. Beer, G. C. Colwell, W. D. Perley, and C. E. Grosvenor.

On motion: Resolved that this committee be authorized to invite all counties not represented on the said committee to take steps with the object of being so represented.

Drainage, its advantages and importance next came up for discussion.

The speakers on this question were Thomas Davidson, O. R. Arnold, W. M. Davidson, Thomas O. Donnel, A. E. Hayes, G. W. Hoben, C. E. Grosvenor and Silas Raymond. After which the following resolution was moved by Col. Beer, and seconded by H. Humphrey, and adopted:

"Whereas number three in the list of subjects for discussion has been before this meeting and the members have had an opportunity of expressing their opinion, therefore, resolved that in the opinion of this meeting drainage can be made profitable to the agricultural interest in this province, and when tiles can be had at a reasonable charge, that the tile drain is the most suitable for our climate and soil.

On motion a committee was appointed to examine the act relating to agriculture in Nova Scotia, with the view of recommending the government in New Brunswick to pass a similar law. The following were appointed a committee: W. D. Perley, H. Humphrey, R. E. McLeod, O. R. Arnold, and C. E. Grosvenor.

Adjourned.

AFTERNOON SESSION.

Association called to order by the president at 3.15 o'clock. The first subject discussed was, "The breeds of sheep most suitable for New Brunswick." The speakers were, A. Kennedy, C. L. Smith, Silas Raymond, L. Estabrooks, W. Fowler, Wm. Graham, Thomas Roach, Col. Beer, W. F. George, A. B. Hays, C. G. Slipp, C. F. Harrison and G. A. Sterling, after which the following resolution was passed unanimously:

"Resolved that Leicesters crossed with Cotswolds are the breeds for this province, and that sheep raising is a profitable branch of farming in New Brunswick."

The committee appointed to consider the agricultural act of Nova Scotia with the view of asking the government to pass a similar law in this province, reported as follows: "That they have carefully read the Nova Scotia Act and make the following recommendations:

1st. The Governor-in-Council shall appoint a Central Board of Agriculture consisting of seven persons of whom one shall be selected from among the members of the Executive government of the province, and the remaining six shall be selected from the districts mentioned (schedule B.) in the manner hereafter provided. Five of such Board shall constitute a quorum, and they shall be a body corporate under the name of the Board of Agriculture.

2nd. It shall be the duty of the officers of every agricultural society immediately after the election of the annual meeting in December to nominate a person suitable for appointment to the Central Board, and the secretary of every society shall forthwith transmit to the secretary of the Central Board the name and address of the person so nominated.

3rd. The Governor-in-Council shall select six from the persons so nominated to be members of the Central Board, one to be chosen for each of the districts specified in schedule B., the preference being given in each case to the person nominated bv the greatest number of societies. In case of equality of votes the persons so nominated for any district, the governor-in-council shall determine who shall be the member.

4th. Electoral districts to be as follows:

District No. 1 to comprise Kent, Westmorland and Albert Counties.

No. 2, Kings and St. John.

No. 3, Charlotte and York.

No. 4, Sunbury and Queens.

No. 5, Carleton, Victoria and Madawaska.

No. 6, Gloucester, Northumberland and Restigouche.

5th. Payment of representatives to be two dollars, and ten cents mileage one way.

6th. Grants to Agricultural Societies and their management to be as at present and the grant to the Board of Agriculturure and its appointments to be the same as it is now.

7th. The Board to hold a Provincial exhibition tri-annually, or as often as they deem prudent.

8th. The management of all matters connected with agriculture to be vested in the said Board of Agriculture.

On motion the consideration of the above report was laid over until tomorrow morning at 9 o'clock, to which hour the meeting adjourned.

THURSDAY MORNING SESSION.

The association met at half-past nine o'clock, the president in the chair. The report of the committee on the formation of a Board of Agriculture was taken up and spoken to by the following persons: O. R. Arnold, H. Trueman, G. H. Hoben, W. F. George, S. L. Peters, Col. Beer, W. D. Perley, C. E. Grosvenor, Thomas Davidson, G. A. Sterling, O. E. Flewelling, Thos. Roach, and Thomas O'Donnell. After which, on motion of W. F. George, the general principle of recommending the government to form a Board of Agriculture was adopted. Association adjourned for dinner.

The association met at three o'clock, the president in the chair. W. D. Perley moved, and Thomas O'Donnell seconded, a resolution expressing the pleasure of the Association at the prospect of an exhibition being held in St. John the coming Fall and suggesting to the government the propriety of opening the said exhibition to the three Maritime Provinces. Passed unanimously. Mr. Perley also moved a resolution which passed unanimously, asking the government to deal as generously as possible with the City of St. John in this exhibition in consideration of the great loss they had sustained in the recent fire (1877).

Col. Beer gave notice of motion to amend the constitution of the Association.

On motion of O. R. Arnold it was decided to hold the next annual meeting at Sackville.

Col. Beer moved that a committee be appointed to revise the constitution and by-laws of the association, their report to be submitted for consideration at the annual meeting in 1881. Carried.

On motion of H. Humphrey the Pet and Poultry Association of St. John, was accorded the right to send delegates to this Association.

On motion of Isaac Raymond the thanks of the Association were extended to the friends in Sussex and Studholm that had so hospitally entertained the members of this Society during its annual session.

W. D. Perley moved and Col. Beer seconded a resolution asking the Dominion government to subsidize a line of steamers between St. John and some port in the British Isles, and gave a number of good reasons for making the request. Resolution passed. A committee was appointed to draft a memorial, and have it forwarded to the government. Committee appointed, S. L. Peters, H. Trueman, O. R. Arnold, Col. Beer and W. D. Perley. Committee appointed to revise the constitution and by-laws, Col. Beer, H. Humphrey and H. Trueman.

The question of a Board of Agriculture was next taken up and the committee's report was adopted section by section, without much discussion. The same gentlemen were appointed a committee to confer with the government with the hope of securing the desired legislation.

At this stage in the meeting word was received of the death of Lieutenant Governor Chandler, and a resolution expressive of regret for his death and of sympathy for the family was moved by W. D. Perley and carried by a standing vote. A vote of thanks to the press, and the association adjourned to meet in Sackville on the first Wednesday in February, 1881.

At the 1880 session of the Legislature an act was passed creating a Board of Agriculture for the Province. The first meeting of this body was held in Fredericton in December of the same year.

The Hon. William Wedderburn was its first president and Julius Inches was appointed secretary. These two appointments were made by the Government. Josiah Anderson, James E. Fairweather, Thomas F. Barker, George A. Sterling, Frederick W. Brown and Robert Swim, the other six members of the board, were nominated by the Agricultural Societies of the Province, which was divided into six districts, the preference being given in each district to the person nominated by the greatest number of Societies. The final appointment was made by the Government.

On Tuesday the 14th of December the members of the board and a number of other gentlemen being present in the Municipal Council room in the County Court House, Fredericton, the President called the Board together and after the formal organization speech delivered an opening address that gave clear evidence of close thought and a fine appreciation of the dignity and importance of the industry they were called to deal with. The following extracts from this address will repay the reader's perusal :

BOARD OF AGRICULTURE: PRESIDENT'S ADDRESS.

Gentlemen of the Board of Agriculture:

I cannot assume the chair of this Board, to which I have been appointed by the pleasure of the Lieutenant-Governor-in-Council, without addressing to you a few introductory remarks. I congratulate you upon your election to the important place you now occupy. I confess I approach the performance of the duties devolving upon me, with great diffidence. I am consoled, however, by the reflection that I am called upon to preside over the deliberations of a body of gentlemen whose intimate knowledge of the proceedings of representative assemblies will lead them to appreciate the importance of affording the Chair the encouragement of their moral support, and who will readily admit that the dignity and integrity of any body are best conserved by a rigid recognition and observance of the distinctive functions and rights of its various members, so that there are maintained between the officers and those over whom they are called upon to preside, at once a mutual independence and interdependence. By these means, we too may secure to this Board that which I earnestly desire and cordially invite, the utmost liberality of thought and speech in harmony with the kindest courtesy of language and deportment. I am also encouraged by the reflection, which sensibly lightens my sense of responsibility, that you, gentlemen, bring to the discharge of your duties here the ripe advantage of intellectual observation and successful experience during a lifetime devoted to the arts of Agriculture. Grave are the responsibilities, however, which are resting upon us. In the development of the various portions and departments of this Dominion, Agriculture is very properly commanding a greater and more intelligent degree of attention than ever before. In deference to the desire of a large portion of the Agricultural class of this Province, the Government has asked and received from the Legislature authority to establish this Board. And now the eyes of the farmers of this Province will be anxiously, and, I think, hopefully turned to it. To some extent—to how great an extent it were difficult to determine—the future of Agriculture in New Brunswick is confided to our care and custody. Responsible and onerous care! But I trust and expect, by a due appreciation of the dignity and duties of our trust, with a single eye to the careful conservation of the one and performance of the other, avoiding all personal aims and ambitions, and all questions of party politics of a Provincial or Dominion nature, we shall be able reasonably to fill the expectations of our constituents, and at least deserve if we shall not achieve success. Thus shall we not only vindicate the wisdom of the Legislature in embarking in this experiment, but we shall, under Divine direction, stamp broadly and benignantly the impress of this Board upon the great Agricultural industry of the Province.

It is largely in vain, or at an immense disadvantage, that the farmer shall rise up early and late take rest, and toil on laboriously from early spring until autumn, with "an eager and a nipping air" shall close up many of his duties, if he bring not to the discharge of his work his best faculties of thought and observation—a just and reflective consideration of the uses, forms and purposes of each department—a discriminating conception and appreciation of the nature and requirements of and his duties to the soil and the stock, which under proper care shall yield him such rich returns; the soil and the stock which are not merely his slaves but his friends—and slaves or friends, unkind or unskilful treatment of which must inevitably reach but one result. Examine the farms of this country. Show me an unpromising and unprepossessing farm, with its broken fences, its dilapidated barns, its irregularly fed and scantily housed stock; its uncared for and noisome barnyard, perhaps fronting on the main road, with its wasting or deteriorating manures exposed to the scorching glance of the sun and the peltings of every storm, an eyesore and perhaps a plague spot, poisoning the water and impregnating the air with the active germs of typhoid fever and diphtheria; with its apologetic-looking garden, "a wild where weeds and flowers promiscuous shoot;" with its rickety and old-fashioned implements exposed and rusting in every kind of weather and creaking in every joint; with its sluggish and consumptive cattle; its meagre meadows dying year by year of a slow process of neglect and starvation, and all the repellant evidences of thoughtless and unintellectual husbandry—and you will show me the farm of the man who is not a farmer, who laughs or perhaps groans at the axiom of the dignity of labor, who works, it may be diligently, but with as little mind invested in his business as the ox which does his bidding and "wants discourse of reason," and who is content to wring from a reluctant and impoverished soil the unsubstantial revenues of a scanty harvest. I do not say in all cases such men fail but in the vast majority of cases, if such men escape bankruptcy, they live at best in comparative penury; and soon they join themselves, or see their sons join, the grand army of discontented grumblers who leave the Province because a just Providence has decreed that as a man sows so shall he reap, and they don't like the decree, and start for an easier life in some imaginary land of promise, where Providence will suspend or divert the laws of nature for their special advantage—or rather where they will find out to their cost how good and fruitful a land they have left behind them; the land with nearly all the advantages of Ontario, with quite as many as Quebec, and far more than the boasted Manitoba and the Far North West. Remember, I have not said these men may not conquer a subsistence—they will do little more; I do not say they are devoid of intellect—but they use it on every other subject except on the subject of nearest importance to them. Having looked on that picture, now look on this. See the farmer who invests his work with intellectual activity and vitality—who bends the loving labor of the head as well as of the hands upon it—whose meadows show the results of careful consideration—who understands the nature and adaptability of manures—who recognizes the vast difference between skilled labor and merely manual and unskilled work—who obtains as soon as he can the best implements, as he also adopts the best methods, of husbandry—whose flocks and herds show the care of the merciful man who is merciful to his beast—who understands that it is cheaper and easier, and quicker and better, and more remunerative as it is more congenial to breed, feed and fatten the best stock, and that the old doctrine is exploded tha excellence in stock merely depends upon feeding and keeping—who prefers the Farmers' Periodical or the Agricultural Department of his daily or weekly paper to the sensational account of the last champion sculling match, or international prize fight, or go-as-you-please walking race, or even the much "continued" heroics of the latest dime novel—around and within whose happy and hospitable homestead are abundant evidences of care and thrift and thought—and you will show me the farm of a farmer in the true meaning of the honorable title; who adds charms and culture and dignity to his occupation; who replenishes God's earth, and who will, with His blessing, garner in at harvest time from his joyful and willing fields a rich reward; whose life shall be a service to the State in that he is a blessing and an example to all around him. There is a mutuality, a reciprocity, there. Agriculture is a benefit to him—he is a benefit to Agriculture; the one repays his toil—his toil repays the other.

We have entrusted to us in this Canada of Ours, unrolled near us and around us, all the essentials of a great country; and it is no indulgence in a merely poetical sentiment to say it is already big with the promise of a mighty destiny. The diversities of soil and climate, capabilities and resources, the rolling prairies and almost illimitable forests; the living, teeming, inexhaustible fisheries; the undisputed indications of yet unexplored mineral wealth; the mighty rivers rolling through alluvial valleys of pastoral beauty to the immemorial sea; the inland lakes and maritime harbors and seaports; the fertile grain and extensive pasture areas; in every thing that a bounteous Nature can bestow; the nascent and expanding Mechanical and Manufacturing industries everywhere trembling with new vitality, and already, in their comparative youth, displaying the skilful handicraft of maturer manhood; a proud mercantile marine, third, if not second, on the list of the marines of the world, and men the peers of any in those places where "merchants most do congregate;" the refined and cultivated spirit in the direction of arts and literature; the highly developed systems of education; the robust, mental, physical and moral health; the easy means of Inter-Provincial and trans-Atlantic communication; the nervous forces of activity engendered by a generous emulation of the great country beside us; the liberal institutions—patterned after those of the exalted empire of which we are a part, covered with the ivy of centuries and yet ennobled and impelled by the highest inspirations of modern civilization and thought—the empire so rightly called the Mother of Free Parliaments; all these combine and conspire to predict the future of this Dominion one of greatness and of power.

We read in the old Mythology that Ceres, the beautiful and majestic daughter of Saturn, first contrived and taught the art of cultivating the fields and sowing the grain; and that to her, crowned with ears of corn, were offered in sacrificial worship flowers and first fruits with libations of milk and honey mixed with sparkling wine; that in her homage and propitiation were celebrated the autumnal feasts before the work of harvest time began, when the young heifer "all garlanded with images of fruits and flowers" and ready for the altar was led around the mellow field, the husbandman following with joyous songs, and

"In long procession shouting as they go;
Invoking her to bles their yearly stores,
Inviting plenty to their crowded floors;
Thus in the spring and thus in summer's heat,
Before the sickles touch'd the rip'ning wheat,
On Ceres call; and let the laboring hind
With oaken wreaths his hollow temples bind;
On Ceres let him call, and Ceres praise,
With uncouth dance and with country lays."

We invoke no heathen deities—we worship no mythical goddess dwelling in eternal sunshine above the snow cappad summits of Olympus; but in the full assurance of a Divine Faith, we look to One above the sunshine and beyond the stars, the Author of all things, who holds our destinies in His mighty and merciful hands; who clothes the fields with verdure and festoons the trees with fruit and beauty; whose are the cattle on a thousand hills and whose clouds drop fatness; who sendeth the springs into the valleys which run among the hills; who prepareth the earlier and the latter rain, and maketh the hills to clap their hands and the valleys to laugh and sing: The Lord of the Harvest! Joyfully and diligently we may labor on, humbly and hopefully confessing—'Paul may plant and Apollos water, but God, who is our God and the God giveth the increase!' "

This Board, like its predecessor, was only destined to have a short existence. It was dependent entirely upon the government for its financial backing and never was anything more than an advisory committee for the executive. It was abolished in 1888 and the government took again the full responsibility of administering the agricultural affairs of the Province, and the Honorable Daniel McLellan, who was Provincial Secretary at this time, was also appointed Commissioner of Agriculture and Charles H. Simpson was appointed Secretary. During the life time of the Board several stock importations were made.

During the year 1888 Hon. Mr. McLellan purchased in Europe under his own supervision one Hackney Stallion, one Clydesdale stallion, one Shire stallion, fourteen Clydesdale fillies, four Shire fillies, four Cleveland Bay fillies and four Percheron fillies. These animals were all sold at Fredericton in the fall of 1888 and brought about seven thousand dollars.

There was not much change in the policy pursued by the Government on agricultural matters till well on in the nineties. The Provincial Farmers' Association and the government had drawn apart a little from one another but were learning that this was a mistake and that they could not afford to oppose each other. Professor Robertson, the Dairy Commissioner for Canada, came to the Maritime Provinces in the discharge of his duties to see if he could not start the farmers in the forward movement in agriculture as they were being started in Ontario and the United States. At Professor Robertson's suggestion the New Brunswick Farmers' Association was called

HON. S. E. REID,
Commissioner of Agriculture, Province of Prince Edward Island.

the Provincial Farmers' and Dairymen's Association; and at his suggestion also the Government agreed to give a small grant to the association and to do what they could to encourage the formation of farmers' institutes in all the townships of the province. Since that time the government, recognizing the importance of agriculture to the state has made its oversight and encouragement, I might almost say, its principal aim and endeavor.

With this end in view they bonused cheese factories, imported stock and seed, paid large sums to encourage the erection of a better class of grist mills, employed peripatetic lecturers to go through the province to instruct farmers in better methods of cultivating the land and caring for the stock; and took the dairy interest under their especial care.

The department is now presided over by the Hon. L. P. Ferris, who is one of the executive and is called commissioner for agriculture. Thomas Peters is deputy commissioner. Harry Mitchell and F. C. Daigle are dairy superintendents and Jos. P. McPeak is clerk.

CHAPTER V.

EARLY AGRICULTURE IN PRINCE EDWARD ISLAND.

Prince Edward Island lies in the Gulf of St. Lawrence, between 46 deg. 47 min. 7 sec. north latitude and 62 deg. 64 min. 27 sec. longitude west from Greenwich. Its length through the centre is about one hundred and forty miles and its breadth at its widest part thirty-four miles. Its area in acres is one million, three hundred and sixty-five thousand, one hundred and twenty. It is separated from Nova Scotia by the Strait of Northumberland, which is only nine miles broad between Cape Traverse and Cape Tormentine. The Island of Cape Breton is twenty-seven miles distant, and the nearest point of Newfoundland is one hundred and twenty-five miles. It was discovered by Cabot and named St. John's Island by that navigator. By this name it was known till the year 1798, when it was changed to Prince Edward in honor of Prince Edward, afterwards the Duke of Kent. In 1780 an Act was passed changing the name to New Ireland, but the act was disallowed by the home government.

EARLY HISTORY.

France was the first nation to assume control over the Island, and in 1663 it was granted with other islands by the Company of New France to Sieur Doublet, a captain in the French navy, with whom were associated two other persons. They established a few fishery stations, but no permanent settlement was made. It remained under French rule till 1763, when it was formally ceded to Great Britain and placed under the government of Nova Scotia. It was surveyed by Captain Holland in 1764-5. Captain Holland reported very favorably of its capabilities and adds: "There are about thirty Acadien families on the Island, who are regarded as prisoners and kept on the same footing as those at Halifax. They are extremely poor and maintain themselves by their industry in gardening, fishing, fowling, etc. The few remaining houses in the different parts of the Island are very bad and the quantity of cattle is but very inconsiderable." The surface of the island is described as slightly undulating, and covered by a bright red loam of uniform character. The soil was sais to be easily worked naturally, and if overcropped would respond quickly to almost any fertilizing material.

In the first settlement of the provinces of New Brunswick and Nova Scotia there was some difficulty in a settler getting a clear title to his land in certain districts, from the fact that large grants had been given by the Imperial Government to individuals as a reward for military service or to political favorites, who were inclined to hold the land till it became more valuable. Settlement in these provinces was not seriously retarded on that account because there was always land to be had in other districts. It was quite different, however, on the Island, as it was a small province, the political favorites and the military hangers-on were able to get possession virtually of the whole island and to hold it for nearly a century.

The first plan of settlement for the little province was proposed by the Earl of Egmont, at that time the First Lord of the Admiralty. On the supposition that the island contained two million acres, he proposed that the whole should be divided into fifty parts of equal extent to be designated "Hundreds," as in England; or "Baronies," as in Ireland; forty of these to be granted to as many men, who should be styled "Lords of Hundreds," and each of whom should pay to the Earl as Lord Paramount twenty pounds sterling yearly.

On the property of the Earl, to whom with his family of nine children ten hundreds were to be allotted, a strong castle was to be erected, mounted with ten pieces of cannon, each carrying a ball of four pounds, with a circuit round the castle of three miles every way.

The forty hundreds or baronies were to be divided into twenty manors of two thousand acres each, which manors were to be entitled to a "court baron," according to the Common Law of England.

The lord of each hundred was to set apart five hundeed acres for the site of a township, which township was to be divided into one hundeed lots of five acres each, and the proprietors of five acres each were to pay a yearly free form rent of four shillings sterling to the Lord of the Hundred. Each Hundred was to have a fair four times a year and a market twice in every week. There were to be courts leet and Courts Baron under the direction of the Lord Paramount.

As a kind of apology for these courts, it is said "they are necessary to bring justice to every man's door, and are absolutely essential for a small people forming or formed into a small society in the vast, impervious and dangerous forests of America, intersected with seas, bays, lakes, rivers, marshes, and mountains; without roads, without inns or accommodations; locked up for half the year by snow and intense frost, and where the settler can scarce struggle from his habitation five hundred yards even in times of peace without risk of being scalped and murdered."

There was to be a Lord Paramount of the whole island, forty capable Lords of forty Hundreds, four hundred Lords of Manors, and eight hundred Freeholders. For the assurance of the said tenure eight hundred thousand acres were to be set apart for establishments for trade and commerce in the most suitable parts of the Island, including one county town, forty market towns and four hundred villages. Each Hundred or Barony was to consist of somewhat less than eight square miles and the Lord of each was bound to erect and maintain forever a castle or blockhouse as the capital seat of his property and as a place of retreat and rendezvous for the settlers; and thus on any alarm of sudden danger every inhabitant might have a place of security within four miles of his habitation. A cannon fired at one of the castles would be heard at the next, and thus the firing would proceed in regular order from castle to castle, and be the means of putting every inhabitant of the whole island under arms and in motion in the space of one-quarter of an hour.

This unique and elaborate scheme was not accepted by the Lords of Trade and Plantations, and a minute of council was passed on the 9th of May, 1764, adverse to the proposition of the Earl and ordering that no grants be made of land in the Island of St. John upon any other principles than those comprised in the reports of the Lands Commissioner of Trade and Plantations. Lord Egmont, however, did not then give up his cherished plan of settlement, but made another attempt to get the Lords to sanction his scheme.

In order to conciliate Lord Egmont and make reparation to him for the trouble and expense to which he had been put in urging his scheme, the Board of Trade offered him an entire parish—about one hundred thousand acres—which he might select. His Lordship declined to take the grant. Campbell, the historian of the Island, writes in 1875: "There can be little doubt that whatever might be the consequences of possession to the Lord Paramount himself and his nine children, the history of the Island would have been far better in his keeping than in that of the men to whom it was afterwards unfortunately committed."

It seems remarkable that the Imperial Government should have so resolutely opposed Lord Egmont's plan of settlement; and in the very year that he made his last appeal, dispose of the island as they did. The plan carried out was to divide the Island among persons who had claims on the ground of military or other public services, and to make the allotments by ballot. The Board of Trade and Plantations prepared conditions under which the various grants were to be made. All petitioners for grants were ordered to appear before them personally or by deputy on the 17th and 24th of June and 1st of July, 1767, in support of their respective claims. During these days, after hearing parties, they selected those whose claims seemed the strongest, and on the 8th of July the list was completed and finally adopted. The ballotting took place on the 23rd of July, 1767, in the presence of the Board. The name of each applicant was written on a slip of paper or ticket and put into the ballotting box—the lots being granted in running numbers as they were drawn.

On twenty-six specified lots or townships a quit rent of six shillings on every hundred acres was reserved on twenty-nine lots, four shillings, and on eleven lots two shillings, payable annually on one-half of the grant at the expiration of five years, and on the whole at the expiration of ten years after the date of the grants. A reservation of such parts of each lot as might afterwards be found necessary for fortifications or public purposes, and of a hundred acres for a church and glebe, and of fifty acres for a school master was made. A strip of land five hundred feet from high water mark was reserved for the purpose of a free fishery. Deposits of gold, silver and coal were reserved for the Crown. It was stipulated that the grantee of each township should settle the same within ten years from the date of the grant in the proportion of one person for every two hundred acres, that such settlers should be European foreign Protestants, or such persons as had resided in British North America for two years previous to the date of the grant, and finally, that if one-third of the land was not so settled within four years from the date of the grant, the whole should be forfeited. "Thus the whole island was in 1767 disposed of in one day, with the exception of lot sixty-six, reserved for the king, and lots forty and fifty-nine, which had been promised to certain persons by the government in 1764 in consideration of their having established fisheries and made improvements on the island, and three small reservations intended for three county towns."

I have dwelt at some length with this land question not only because it is interesting historically, but because the manner in which the Island lands were first allotted was a source of grievance to the people and the government for more than a century, and must have retarded the growth of the province and effected seriously the happiness of its people. The question was not finally settled till the Province entered the Canadian Confederation and eight hundred thousand dollars were placed at the disposal of the Island government for a full settlement of the long vexed question.

Prince Edward Island though called by Munro in 1864 "The Grainery of the Maritime Provinces," was given a very different rating by the celebrated Cobbot, at a much earlier period. Cobbot wrote "The Sensible Scots are pouring out amain. Those that are poor and cannot pay their passage, or can scrape together only a trifle, are going to a rascally heap of sand, rock and swamp, called Prince Edward Island in the horrible Gulf of St. Lawrence, but when the American vessels come over with Indian corn, flour and pork, and beef and poultry and eggs and butter and cabbages, and green peas, and asparagus, for the soldiers and other tax-eaters that we support, upon that lump of worthlessness—for the land bears nothing but potatoes—when these vessels return the sensible Scots will go back in them for a dollar a head and not a man of them will be left but bed-ridden persons."

This unfortunate description proved wholly incorrect. The soil turned out to be specially adapted to the growth of cereal crops and potatoes, and to the cultivation of these crops the farmers turned their attention in the early history of the country. Such was the success that soon Island oats and Island potatoes were quoted in "prices current" in the Halifax, St. John and Miramichi markets.

EARLY PROSPERITY.

The impetus given to Nova Scotia agriculture by Agricola's letters was felt also in Prince Edward Island, and in the twenties a Central Agricultural Society was organized at Charlottetown, and district societies were formed at Princetown and St. Eleanors. Hon. George Wright was made the president of the Central Society, H. Haviland, vice-president, and Peter Macgowan, secretary-treasurer. Annual exhibitions were held and later a government stock farm was started and Island agriculture for many years was exceedingly prosperous.

In stock raising the Island farmers very early turned their attention to the growth of horses for sale and for more than half a century they have supplied annually a large number of horses to buyers from New Brunswick and Nova Scotia; and at the present time, if an individual or company in either of these provinces requires a good horse or a number of them, the Island is looked upon as the most likely place to furnish the class of animal desired.

Thus it was that oats, potatoes and horses became, for many years, the principal exports from the province, supplemented later by pork and eggs, and still later by lambs, live geese and dairy produce.

It is a well understood fact that continuous cropping without returning to the soil in some form the fertilizing material taken therefrom will in the end impoverish the richest land.

The Island farmers, though excellent scavengers for fertilizers to keep up their farms, began to notice that their fields were not giving so large yields as in former years. This shrinkage in production which was perhaps not so apparent until the late sixties, was not by any means confined to the Island province.

Speaking on this subject as early as 1850, the president of the Agricultural Association of Western Canada said, "The farms on the whole line in the old settled townships from Montreal to Hamilton and around the banks of lakes, rivers and bays, for a space of eight or nine hundred miles with few exceptions, are what is termed in Canada worn out lands." It was twenty years later before the newer sections of the great province of Ontario began to feel the pinch that comes from the exhaustion of the soil, the effect of which is mortgaged farms and an exodus of the young people to the prairie provinces.

The Ontario farmers met the difficulty by changing their system of farming in the direction of raising less grain and requiring more stock. Barn-yard manure applied to the soil in sufficient quantities would restore the lost fertility, hence came the cry for more cows and more fat steers. A few leaders started the ball rolling and co-operation in dairying, Farmers' Institute, and the British market did the rest.

While, it is true that Ontario has to spare annually no small number of her people, who seek homes in the West, she still has attractions potent enough to draw a considerable share of the foreign immigrants, while her farm practice is held up as a model for the rest of Canada to copy.

MUSSEL MUD.

Prince Edward Island farmers did not at first pursue the same methods followed by the Ontario men when they found themselves in the same predicament. No Island farm is more than fifteen or twenty miles from the sea, and a large percentage of the farms lie on the coast. Sea-weed, of which every storm or heavy blow brings large quantities within easy reach of the shore farm, had been used as a fertilizer for a long time. In prospecting for something to supply the lost fertility to his farm some one experimented with mussel mud and it proved a great success. There were extensive beds of this mud, as it is called, in the numerous bays and inlets of the sea around the Island, and it was to these mussel beds that the farmers now turned their attention. These old shells consisted largely of lime and the first effect on the Island soil was so wonderful that it bade fair to revolutionize Island farming. In addition to its fertilizing properties there was another thing in its favor, it could be hauled to the fields or barn-yard in the winter when all farmers, and particularly the Island farmers have the most leisure.

The plan of getting the mud from the beds was on this wise: A number of farmers would join together and construct or buy a mud-digger. This piece of machinery was constructed on very much the same principle as a harbor dredge, but with this difference that instead of floating on the water it was set as firmly as possible on the ice and horse power was used instead of steam to move it forward when required and to hoist the shovel filled with mud. When the team arrived on the ice the sled was placed where the mud from the shovel could best drop into it, and the horses were hitched onto the windlass. A few shovels full would fill the sled, and the horses would be hitched up again and the mud taken wherever it was wanted and another sled put in its place. It was a cold place to work, especially on a windy day, a long piece of ice had to be cut out to give the shovel a chance to do its work, and there was always some danger of getting wet, but this did not seem to hinder the work in the least so long as the mud was to be found, and it answered the purpose for which they dug it.

It was soon found, however, that a second dressing of this mud did not have so stimulating effect on vegetation as the first, and a third dressing, unless a long term of years ensued, was of no appreciable value. This was a great disappointment and sent the farmers back to compost and barn-yard manure. The mud is still considered valuable as a stimulant, and as it contains some plant food, it is still used to a considerable extent. It is used, however, more judiciously and is supplemented by other forms of fertilizing material. Once in ten or fifteen years is probably as often as this mud can be profitably used.

"Mussel mud is an estuarine silt containing great quantities of oyster, mussel, and clam shells, the first usually predominating, which occurs in the bogs and estuaries around Northumberland Strait and at the mouth of the Bay des Chaleur. The mussel beds are often deep and furnish an almost inexhaustible supply of this valuable fertilizer. It is especially suitable for the soils resting upon the carboniferous rocks which are nearly destitute of lime.

Although known by the name of mussel mud from the presence of the mussel in the deposits, the designation of oyster mud would be really more applicable, since the shells of the oyster predominate. Clam shells are also found in it. These are all packed in a paste of mud, sand, &c., containing other organic debris. The whole deposit is a formation of a recent period. Samples analyzed by Prof. F. T. Shutt, shows that the amount of nitrogen, the chief fertilizing agent in their composition is small. Its chief value for agricultural purposes is owing to the quantity of lime it contains. The fertilizing value is increased when it is composted with barn-yard manure, peat, swamp muck, etc., etc."

Surface Geology of Prince Edward Island,
Dr. Robert Chalmers, F. G. S. A.

PROF. ROBERTSON COMES TO THE ISLAND.

The mud fertilizer enabled farmers to tide over another decade or two, when it became evident that deterioration of the farms was again going on. About this time (1880) one or two cheese factories were started, but were so poorly patronized after a year or two that the venture proved a losing business for the promoters.

While matters were in this state the Dairy Commissioner of Canada, Prof. Robertson, in the discharge of his duties, made a visit to the Island and told the farmers there that their salvation depended upon the cow, or co-operative dairying. This gospel he preached in season and out of season, as the Professor can preach when he is full of his subject. He not only talked dairying, but was ready to assist them in getting the co-operative system introduced; and, as he was backed to a certain extent by the Dominion government, he was well able to carry out any promise of assistance that he might make.

To show what has been accomplished on the Island in the last two decades in the increased output of dairy goods, I will quote from the note-book of a visitor to the province in 1888, and some statistics of the dairy records of the year 1903. The visitor, who is a professor, writes: "The surface of the Island is slightly rolling and is covered by a bright red loam of uniform character. The soil is easily worked and if overcropped, responds quickly to manure. It is a lovely spot and resembles very much an English landscape, as, instead of the log fences used in Ontario, there are hedges of English and Canadian hawthorn along the roadsides and round the fences. * * * * * The Island has the best pasture land on the continent of America, but the people do not make any butter or cheese for export, simply because they don't know how, and in fact, don't seem to care much whether they do or not.

"There are also very few apples grown, and from observations I am of the opinion that the soil and climate of the Island are fully as well adapted to growing apples as the famous Annapolis Valley in Nova Scotia. As regards small fruits, such as strawberries, raspberries and blue berries, I never in my life saw them grow in such quantities."

Since the professor jotted the above in his note-book several things have happened, and I find that the Island that did not make butter or cheese for export in 1888, according to the statement above, in the year 1903 supplied to cheese factories milk to make two million, seven hundred and twenty-nine thousand, five hundred and fifty-six pounds of cheese; and five hundred and fifty-six thousand, six hundred and forty-seven pounds of butter. The same year the total net value of cheese and butter manufactured was $308,477.74, or about three dollars for every inhabitant of the Island. About half of the butter was exported and a large part of the cheese. This showing is surely a tribute to the educational work of Professor Robertson, as well as to the capabilities of the little province.

According to Secretary Hughes, of the Elmsdale Dairy Association, for the same year, that association manufactured one million, four hundred and two thousand, three hundred and twenty-two pounds of milk, supplied by one hundred and thirty patrons, into one hundred and thirty-two thousand, four hundred and three pounds of cheese. Amount of milk required to make a pound of cheese, 10.59; average price received, 10.14 cents per pound; average price paid patrons for 100 pounds milk 80.32 cents; average cost per 100 pounds for hauling the same, 6.49 cents; total receipts for cheese, $13,438.49. Amount paid to patrons, $11,263.49; patron supplying the largest quantity of milk, Mrs. John Hughes, who furnished 45,958 pounds.

The increase in the cultivation of fruit, more particularly apples, has been almost as marked as that of dairy products, and in the last few years this province instead of importing apples is sending supplies of this fruit to the British market.

AN ISLAND FARMER'S VIEW OF THE SITUATION.

A number of the foregoing pages were sent before publication to an Island farmer for correction and any suggestions he might be disposed to make. On returning the paper he writes: "Have read your manuscript over and do not suggest any change. * * * * I do not know which of the two is the Island's best friend, mussel mud or Professor Robertson, but I rather give the preference to the Professor. He did not give us such a cold job, but we who are at the first end of the milk-drawers' route have to get up pretty early in the morning. The factories are here now, and have done and are still doing a good work. The farms are building up and I do not see that there is danger of any serious re-action taking place. With regard to mussel mud, I think you might have said that every fifteen or twenty years is as often as it can be repeated profitably. This has been a bumper year for mussel mud digging. Probably there has been as much dug up this year as in any one year in the past. Summerside's out-put will be nearly five-hundred car-loads, which will coat about that many acres, and will be left all along the line and there is room for lots more. While, as you say, there is scarcely any farm more than fifteen miles from the shore, there are quite a number a good deal further than that from good mussel beds."

COMMUNICATION.

In making comparisons between farming on the Island and in the two other eastern provinces, it must be borne in mind that, while the latter provinces have access to the markets of the world all the year, Prince Edward Island is greatly handicapped by her comparative isolation for nearly five months of the winter. From the time the frost king closes the harbors of the Island province in the Fall, till they open in the Spring, the farmers have to keep their produce on hand or take for it whatever the home trader who buys on speculation is willing to give. Before the days of railroads, when business was virtually suspended everywhere in the winter, their being shut out of the market for four or five months of the year, was not so vital a matter, but the advent of railroads has changed things, so that instead of hibernation in trade in these winter months, as formerly, factories and machine shops and transportation in all lines, go on quite as steadily as in the summer months. So long as communication is interrupted between the mainland and Island farmers, these latter will not be able to compete on equal terms with those who follow the business in the other provinces, although possibly they have some advantage over the other provinces in the summer from their proximity to the sea and the European market.

Judging from the winter of 1904-5 the only way in which uninterrupted communication can be secured to the Island is by a tunnel scheme. At first sight the expenditure required to carry out such an undertaking for the better accommodation of a hundred thousand people in transit facilities seems entirely out of proportion to the good hoped to be accomplished. But when the subject is reviewed in the light of obligations entered into, when we think of it as of a million acre farm which now supports a hundred thousand people and could easily be made to support double that number, when it is remembered that the population will continue to decrease if winter communication is not greatly improved, and that, if the tunnel is a feasible project, the country can stand the expense, then I think the question takes on another complexion. When it is proposed to tunnel the Straits of Dover and annex Great Britain to the Continent in that way, there ought to be no great difficulty in successfully linking the Island to the mainland by a subway, or tunnel as is proposed.

CHARACTERISTICS OF THE PEOPLE.

The first settlers on the Island were chiefly from Great Britain and consisted of Irish, Scotch and English immigrants. The few Acadians that found their way there, before and after the expulsion did not all leave the Island, and descendants of those that remained are now, as in other provinces, loyal subjects of Edward VII., and good Canadian citizens. The Island people have the reputation wherever they are known of being very hospitable. Their insular position has also given them characteristics peculiar to themselves. In the race for first places both in scholarship and the more strictly business world, they are forging ahead and Prince Edward Island men are found almost everywhere either on the top rung or hustling to get there. For the success they have attained and the energy that enabled them to do so well they are indebted very largely to the moral training and physical exercise that almost invariably goes with the life on the farm.

STATISTICS.

The Government of the Island has published a third edition of a handbook of Prince Edward Island, the Garden Province of Canada, compiled by W. H. Crosskill, the provincial librarian. This is a most complete summary of the history, progress and resources of the province. The following statistical information is taken from this work:

Of the total acreage of 1,397,991 acres, 1,194,508 are occupied, of which 726,285 are improved or under cultivation. The unimproved land consists of 350,366 acres in forest, and 117,857 acres in various conditions, such as swamp, marsh or waste land, and land in rough or natural pasture. The occupied land is divided between 13,199 farms of five acres and over, and 865 lots less than five acres in area, of which the average size is 1.56 acres, 30 per cent. are less than an acre each and 70 per cent. are an acre or more, The average size of farms is 90.74 acres, of which 55.14 are improved and 33.60 unimproved. Of the total number of farms 389 are from five to ten acres in extent; 3,769 are from eleven to fifty acres, 5.380 are from fifty one to one hundred acres, 3,030 are from 101 to 200 acres, and 501 are 201 acres or more. The land owned is 97.23 per cent. and the land leased on rental 2.77 per cent. of the whole area occupied by farms.

Of the land improved about 62 per cent. (447,094 acres) is in field crops and 0.5 per cent. in orchard and garden, and 284,220 acres in pasture.

They have not made much progress in re-foresting as their forest plantations cover only twenty-eight acres. The number of acres in orchards in 1901 was 3,199.

The total value of farm property according to the census of 1901, was $30,434,089. Of this amount land represented $15,148,064 and buildings $7,840,444, implements and machinery $2,618,507, and live stock, including pure bred animals, $4,826,984. Reduced to a farm of the average size the value of each farm on the Island is $2,314, whereof $1,748 is for land and buildings, $199 for implements and machinery, and $367 for live stock.

The total gross value of farm products for 1901 was $4,764,674 for crops, and $2,648,623 for animal products, making an aggregate of $7,413,297 or $564 in the year for an average farm, which is 24.36 per cent. on the investment.

The rent of leased farms is ninety-five cents per acre, and the rate of wages $3.68 per week.

The average value of horses on farms per head is $63.64, of milch cows $22.04, value other horned cattle, $10.63, sheep $3.00 and swine $7.40. The average value of horses per farm $161.15, milch cows $93.33, other horned cattle $45.36, sheep $29.17, swine $26.78, and poultry and bees $12.98, milk and cream sold to cheese and butter factories $464,032.

The animal products for the census year were as follows: Killed or sold for slaughter or export—Cattle, $19,497; Sheep, $54,394; Swine, $46,104; poultry, $161,808; fine wool, 133,133 pounds; coarse wool, 267,303 pounds; eggs, 2,426,231 dozen, valued at nearly a quarter of a million dollars.

The number of stock on the farms of the island in 1901 was: Horses, three years and over, 26,905, under three years, 6,826; milch cows, 56,437; other horned cattle, 56,242; sheep, 123,540; swine, 48,007; turkeys, 15,309; geese, 36,806; ducks, 13,436; hens and chickens, 515,399. Milch cows show a gain of 10,588 in the decade between 1891 and 1901, and horned cattle a gain of 10,496.

In 1899 there was manufactured 3,746,168 pounds of cheese, valued at $376,000, and in the census year 4,457,310 pounds valued at $449,088. Owing to various causes there has been a falling off in the production of this staple, but the industry is bound to recover itself and go on increasing. The value of butter made on the Island in 1905 was $104,633.24 and the number of creameries is steadily increasing.

CHAPTER VI.

THE EDUCATIONAL DIFFICULTY.

Reference was made near the close of the second chapter to the Nova Scotia Agricultural College and Agricultural Education generally. I shall now endeavor to trace somewhat more in detail the development of this and similar institutions.

By degrees the thoughtful men of the country began to realize that something must be done to awaken a greater interest in agriculture. If the land were allowed to go back to its original condition, all other industries would suffer and the growth of the country would receive a serious check.

Theoretically, farming and farm life have always been popular, but so long as the young looked upon farm work as a sort of drudgery, and as not over respectable, and so long as the returns in money were small, how were the virgin fields to be made to smile into harvest and the worn-out fields to be restored to fertility?

The problem how to keep the young men on the farm, brought forth newspaper articles without number. Many and various were the reasons given that were leading to the desertion of the old homesteads. No doubt more than one cause contributed to the result, but from the fact that the old homesteads still continue to be forsaken for the new ones in the west, we may judge that the true cause is an economic one, not readily changed by every youthful experimenter, or vote seeking politician.

There was a consensus of opinion among a limited number of the younger men that farmers should have a better education, not only that they might be able to work their lands more intelligently, but that they might also be able to hold their own with men of other callings. When high schools and colleges began to multiply, a sprinkling of farmers' sons were found attending them. It soon became evident, however, that the boy educated in the arts college very soon lost his interest in the farm and rarely afterwards turned his attention to agricultural pursuits. The student thus favoured usually found that his increased knowledge and power to think, and work systematically enabled him to earn a larger income in some other business.

To meet this difficulty, to give the boy intended for the farm the mental training that is his right, and at the same time to keep alive in him the love of farm life, the Agricultural College was called into existence. Here it was hoped that the education of mind and muscle would be carried on simultaneously, and any taste inherited or previously acquired for the cultivation of the soil, might be intensified. In a college of this class, too, it was thought that the lad from the country would not be so much exposed, as in the arts colleges, to the influence of students from wealthy homes, whose early surroundings had fostered in them habits foreign to a successful career on the farm.

This suggestion of an Agricultural College met with the approval of those who were working for the solution of the problem, and after a good many years of struggle and discouragement the idea was taken up and acted upon.

FOUNDING OF COLLEGES.

As early as 1826 an Agricultural school was established in Derby, Connecticut. In 1857 and in 1859 Michigan, Maryland and Pennsylvania started Agricultural Colleges, but the Michigan college alone survived the difficulties these institutions had to meet fifty years ago. It was not until 1862 when a law was passed giving a grant of land for this purpose to each state, that these colleges got a safe footing in the United States. The amount ot land actually reserved by each state under the law varied from 24,000 acres in Alabama to 99,000 acres in New York. This land was given for the express purpose of aiding in the advance of agricultural education.

In 1865 Massachusetts, New Jersey and New York established colleges under the new law. Massachusetts, however, gave one third of the income derived from the land to the Massachusetts School of Technology, Wisconsin followed in 1866, West Virginia in 1867, Tennessee in 1869.

The Guelph College in Ontario, was opened in 1874. The name decided upon was the Ontario School of Agriculture, and Experimental Farm, and the motto suggested was "Practice with science."

When these colleges were established, it was hoped that, for a nominal sum farmers' sons and young men intending to farm would get the kind of education necessary to enable them to prosecute their own business with success and incidentally make them the equals in mental development and training of those following other avocations. It was found, however, after several years of experience that comparatively few students came from the homes of the ordinary farmers. It was seen also that the same old tendency, so manifest in the students educated in the arts college, still showed itself

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in the new colleges. On account of the small number of students and the lack of satisfactory results, it looked for a time as if the Agricultural College was doomed. The comparative failure of these institutions was no doubt largely attributable to the want of the right stamp of men to take charge of them. It was only after long years of experience that teachers were produced who could compel the students to respect the profession and stir their ambition to succeed in it.

Between the inception and final success of the Agricultural College, the idea of the agricultural experimental station was introduced from Europe. These were established in Canada and in the United States at about the same time.

After teachers were developed to man the Agricultural Colleges, the next difficulty was to induce the farmers in any numbers to send their sons there to be trained. The prejudice in the rural districts against "book farming" was still very marked, and this was augmented by the value of the labor lost to the home farm, while the son was away. The leaders of the movement have sought to overcome this last objection by arranging for short courses, to be given in the winter when the boys are not so much needed at home. The following, taken from a newspaper, shows the kind of work the boys are given to do in the Truro Agricultural College :

THE TRURO COLLEGE.

"Holidays at the Agricultural College are over and the regular course students have returned to work. Numbering 15 at the beginning of the term, the class has gradually grown until there are now 22 students enrolled. Several more have applied for admission, but have been advised to wait until the next term begins in October.

"As I write I can hear the sound of saws and hammers in the basement classroom, where Mr. Fuller has ten of the students learning how to use carpenters' tools. Some are making saw-benches, two are making a wheelbarrow, and others are learning how to sharpen tools and do various kinds of carpenter work, Ten more of the students are in Prof. Sears' classroom studying Horticulture, and two of the more advanced ones are studying Botany under Prof. Smith's direction. This morning a discussion of the care and management of Dairy cows by the writer, and a similar discussion on Poultry, by Mr. Landry, filled in the students' time. Practical work in the stables commenced today and five o'clock this evening will find a number of the boys at work feeding, milking and doing all sorts of work in the stables. Such is a day at the College, except for changes in the programme of classes. Some mornings they are at the Normal School, where Principal Sloan and other members of the Normal School Staff give instructions in English, Mathematics, and Chemistry. On Fridays Dr. Jakeman has them for the greater part of the day, teaching them how to treat animals in health and disease, as well as how to shoe and perform various operations on horses.

"Numerous applications are coming in for the 'Short Courses,' and it is anticipated that over 100 will be in attendance from February 1st to February 15th, on which occasion the faculty will be assisted by leading agriculturists, and more especially those who have made a success of the different lines of farming in our own province.

"Almost every day letters are being received from farmers who wish to carry on co-operative experiments under the direction of the College. An experiment in growing clover, the seed of which had previously been treated with nitroculture supplied from Guelph, gave such excellent results that we have arranged to send a small amount to any interested farmers who will agree to report to us the results they obtain. Another experiment in the growing of mixed grains (barley and oats) in comparison with either grain grown separately, produced 15 per cent. better results. We believe from this experiment, that it will pay farmers, who feed all their grain, to grow at least some fields of mixed grains, but in order to assure ourselves of this we want a large number of farmers to test this for themselves. Small quantities of seed will be supplied free from the College to those who will agree to report the results. By developing this policy we expect, in a few years, to have data in regard to farm crops which, being derived from local sources and from practical men, will be of great value to our provincial agriculturists."

FARMERS' INSTITUTES.

It was resolved also to try to create an appetite in the youth for a closer knowledge of agricultural processes. With this end in view it was decided to give both boys and parents an opportunity to learn in their own neighborhood some of the things the boys would be taught if they went to college. This led to the establishment of the Farmers' Institutes. Here the farmer and college professor are brought face to face, new methods are talked over, and old ones condemned or approved. Thus farmers' institutes have come to be looked upon as indispensible in the forward movement in agriculture.

Six years ago, it may be noted, a seed competition was started in Canada under the management of Professor Robertson. The object of the competition was to turn the attention of farmers to the very great importance of sowing better seed. Prizes were offered for the best results from certain sized plots, and also for the best heads of wheat and oats. The whole plan was devised in such a way as to make the boys and girls on the farm interested workers in the improvement in the quality of seed grain. The competition extended over a period of three years. The money to pay the prizes and supervise the work was supplied by Sir William Macdonald.

CONSOLIDATED SCHOOLS.

Following the seed competition came the introduction into Canada of the principle of consolidated schools. The plan is for a number of school districts to unite, pool their revenues and erect a building capable of accommodating all the children in the district thus formed. This system had been in operation in Australia and the United States and other places for a number of years.

William S. Carter, Inspector of Schools in St. John and Charlotte counties, was perhaps the first to bring the subject before the public in these provinces, but nothing was done in a practical way until the matter was taken up by Sir Wm. Macdonald and Prof. Robertson. Sir William supplied funds to build and equip one of these schools in each of the provinces. The children from the outlying districts are transported in vans, while those within a certain limit, usually one and a half miles, walk, as before. In each school Wood-working and Household Science are taught. There is also in connection with each a school garden with individual plots for each student. Here the students are given practical lessons in agriculture, and have a splendid opportunity to study plant life. Nature study generally is given especial attention in these schools, and the pupils are led to love nature as revealed in flower, tree and landscape. It is hoped in this way country children may incline in greater numbers toward the cultivation of the soil, and remain in the province in which they are born. A number of schools of this kind have since been established, some of them surpassing in size and equipment the Macdonald schools themselves.

Although these schools have for their sole object the bettering of the conditions of the rural communities, strange as it may seem, the chief opposition to them has come from the farmers themselves. The objections raised about all come under two heads, viz., increased expense, and local jealousy. The chief advantages seem to lie in the fact that the larger school can afford to equip the building in a way that would otherwise be impossible, and secure a class of teachers that would not teach in the small country schools. Specialists, as it were, can be engaged to look after school gardening, manual training, household science, etc. The more extensive grounds give a greater opportunity for the artistic decoration of the same under skilful direction. The buildings themselves can be more regularly heated and ventilated, and sanitary arrangements generally can be made decent and healthful.

Farmers are conservative and are slow to accept the principle of organization and co-operation. Educational work, however, on the part of a few leaders, who have set forth strongly the necessity and importance of a greater unity of action has convinced a large number, if not the majority, that the "New Agriculture" can only be made successful by a frank and generous co-operation among all who follow the business.

As a consequence of this changed opinion, Farmers' Associations and Farmers' Picnics and Fat Stock Shows and Institute Meetings and Annual Conventions have become so common that no farmer can say that the opportunity to increase his knowledge of the business is not within his reach.

There surely was never a time in the history of the world when all governments took so lively an interest in the prosperity of the farming industry. It is doubtful if in this particular the farmers meet the government halfway.

EXPERIMENTAL FARMS.

The Central Experimental Farm at Ottawa was established in 1886 and the four subsidiary farms for the provinces, as soon after that date as they could be located and put in working condition. The one that was to serve the Maritime Provinces was placed at Nappan, Nova Scotia; the Manitoba one at Brandon. Of the other two, one is at Indian Head, Saskatchewan, and the other is at Agazzi, British Columbia.

As early as 1884 a select committee of the House of Commons of Canada was appointed to inquire into the best means of encouraging and developing the agricultural industries of Canada, with power to send for persons and records, and to report to the House.

As is generally the case in such circumstances a list of questions was formulated, and 1500 copies were forwarded to addresses furnished by the members of the Commons.

Question 7 of this list was as follows: "Would the establishment of an experimental farm or garden where varieties of foreign grain, fruit trees and fertilizers might be tested and whence such seeds, plants, etc., might be distributed throughout the Dominion be advisable?"

Of the three hundred and eighty-five replies to this question, two hundred and seventy-eight were in favor of the establishment of an experimental farm, and sixty-four against. This in addition to a large amount of evidence from other sources in favor of the farm, settled the question. Below is the vote by provinces for and against:

ESTABLISHMENT OF EXPERIMENTAL FARM.

	No. of Replies.	For	Against
Ontario	169	121	33
Quebec—(English)	35	20	8
do (French)	89	68	14
Nova Scotia	59	46	6
New Brunswick	25	15	3
Prince Edward Island	7	7	...
Manitoba	0	...	...
British Columbia	1	1	...
Total	385	278	64

Col. E. Beer, of Sussex, the late Julius Inches, of Fredericton, and S. L. Peters, of Otnabog, Queens county, speak for New Brunswick in the published report and all favor better educational opportunities for farmers.

C. R. H. Starr, Port William, Nova Scotia, writes to the committee: "It is with pleasure I enclose your list of questions which I have answered to the best of my knowledge and belief and trust they may be of some assistance to you in promoting the laudable object you have in hand. I am glad to know there are members in the present house who are willing to advocate the cause of agriculture, which has too long been allowed to take care of itself, and I sincerely hope you may be successful in inaugurating a new era in the agricultural prosperity of our great Dominion."

Major General Laurie, who was at that time a resident of Nova Scotia, was, I think, the only representative from the Maritime provinces, that appeared before the committee at Ottawa to speak especially for the industry in that province, and extracts from his evidence are given here as showing his view of the condition of things there in the year 1884.

(The late W. F. George of Sackville, New Brunswick and K. M. Starr, of Nova Scotia, were before the committee as part of a deputation from the Dominion Grange.)

General Laurie says: Personally I have been engaged in farming in Nova Scotia since 1866. I have not taken up farming as a means of livelihood but I have had a good deal of experience in agriculture and have been president of the Board of Agriculture for some eight or nine years. In that time I have striven as far as in me lay to improve the system of farming in our province.

Questions: "Under what difficulties does the present system of agriculture labor and in what respects are the Canadian farmers placed at a disadvantage when competing in foreign markets?" Answer: "I speak of the Nova Scotia farmers because I am best acquainted with them. The Nova Scotia farmer labors under these disadvantages to my mind, he has received no agricultural education, by which I mean training in the science connected with agriculture and concurrently in the application in practice of the knowledge so acquired. He consequently is quite unaware what his land is capable of or how to obtain the greatest return for his labor or other outlay. Our fruit growers have given great attention to that industry and with exceeding good results, but with this exception, and that of a few intelligent men who under favorable conditions are reclaiming marsh lands and carrying out their work profitably, the vast majority simply obtain a subsistence and the results consequently are so discouraging that even when in any way money is acquired it is invested in anything rather than farm property. There is no encouragement to invest capital in farm operations because their appears no promise of return, consequently improvements are not actively carried out. Hired labor is only employed at busy seasons and being irregularly employed, the supply is irregular and uncertain and wages are high. This reacts and men of means are discouraged from engaging in agriculture. Our young men receive good advantages in education but not in subjects which are directly of value to agriculture and they go into overstocked professions and leave the country. We require first, to get them to remain at home and follow agriculture, for I conceive the native born is the best inhabitant a country can have. Next we want immigration of men of moderate capital. Farm property is exceptionally low and plentiful in the market but unfortunately the capabilities of our province are not well known in Europe, and hence intending immigrants do not come to us. We want men of some capital as machinery is now a necessity and manual labor cannot compete with it. Hence those who attempt to cultivate without machinery become discouraged and leave the country."

Question: "Have you any agricultural schools in your province?" Answer: "We have not, but very much desire to have one."

Question: "Do you believe it would help agriculture very much?" Answer: "I think your proposition for an experimental station should be associated with an agricultural college. The experimental station, the model farm and the institution for imparting agricultural education seem to be bound up together and are very necessary in our province." The experimental farm at Nappan and the model farm at Bible Hill,Truro, where the New Agricultural College is situated, give Nova Scotia the combination General Laurie suggested.

Questions: "Then there is another thing, we must be content to change our system in view of the development of the newer portions of the country. Take for instance wheat growing, we might grow enough for our local wants but it is a question whether it would not be as well to allow the northwest to grow wheat for exportation, and, for the eastern provinces, which have such good shipping facilities, to raise stock. I fancy in the older provinces we will have to go more into specialties as time progresses."

Answer: "Yes! Did you not notice Mr. Gladstone's latest advice to the farmers of Chesshire should take." view of the competition in wheat and stock raising coming from Canada and the United States, those lines of agriculture would soon be things of the past with them and the best for them to do is to go into making jam."

Question: "I notice that around Hamilton the farmers are going into specialties and doing less every year of general farming. Take pumpkins, they used years ago to grow a few to feed to the cows but now they grow them in quantities for the canning factories. Even four or five miles from the city, the farmers are leaving everything else to grow them. In fact they are rapidly moving in the direction pointed out by Mr. Gladstone as that which the farmers of Chesshire should take.'

Answer: "Yes! The best farming districts are now being devoted to fruit and our farm products would fall off materially if special lines of products were not adopted."

Question: "Farmers must adapt themselves to circumstances, or as the saying is, they will be left." "Yes."

The Committee adjourned.

A very large amount of money was needed to establish the farms and no inconsiderable sum has been required annually since to keep them in running order. Yet so strong is it believed both in the legislature and outside of it, that great good must accrue to the agricultural interests out of the money spent in this way that government and opposition have always voted cheerfully, not to say lavishly, the sums required to carry on the work.

It is not probable the results from these institutions have been all that the most sanguine expected and there are yet some among us who can see no good in them. Still they have done and are doing important and excellent work, not the least of which is educating farmers up to a higher appreciation of themselves and the industry they follow.

CHAPTER VII.

BAY OF FUNDY MARSHES.

Professor Johnston in his classifications of New Brunswick soil placed fifty thousand acres as number one. He probably underestimated it by one half. The marshes and intervales made up the principal part of this soil and there are about 50,000 acres of marsh and certainly not less than this amount of intervale.

It is claimed that the Bay of Fundy marshes possess peculiarities that make them differ from all other marsh soils. For this reason I append a description of the Bay of Fundy marshes and also a paper descriptive of the intervales of the St. John River.

The description of the marsh lands is taken from a work prepared by Dr. W. F. Ganong and published in the Botanical Gazette in 1903. The paper on the intervales was most kindly prepared for this work by W. W. Hubbard.

Speaking of the geological origin of the marshes, Dr. Ganong says: "The central fact in their formation is that they have been and still are being built in a subsiding basin out of inorganic red mud brought in from the sea by the rush of the tides whose height is the determining factor in their height. Practically no part of their mass has been built from detritus brought down by rivers, nor has vegetation either marine or land, helped to any appreciable extent to build them. . . . .

It is these two facts, their formation out of a purely inorganic mud brought in by the sea and the lack of co-operation of plants in their building which differentiate them from the salt marshes so common elsewhere about the mouths of tidal rivers.

Whence, then, comes this great store of rich mud ? On this all students agree; it is from the red permo-carboniferous sandstones forming the sides and bottoms of the channels between the marshes and the Bay of Fundy. These soft rocks are rapidly eroded by the strong tidal currents, which, in their onward rush to the northeast, carry the detritus whirling in suspension, to drop it as their force is checked by their quiet spread over the marshes at the highest tides. Thus the sea bottom supplies the materials, the rush of the tidal currents the power to remove, carry and lift them and the quiet of the waters at the turn of the tide, the condition allowing them to be dropped. In this way the sea is building up the land perhaps on a greater scale here than elsewhere on the globe.

The quantity of mud needed to form the marshes has become immensely great. Not only do they cover many square miles, but borings show that they can be as deep as 80 feet at least, and moreover the marsh extends everywhere under the bogs and shallow lakes clear to their utmost bounds. To supply this quantity the channel to the Bay (Chignecto Channel) must have been enormously widened and deepened, and hence it must have been very small when the process began. The sea has quarried out the channels and the marshes are the debris. This process has been aided, or more properly, allowed, by the recent subsidence of this region, of which the indisputable evidence is found in the buried forests well known to exist at several points under the marsh much below the tide level.

Another fact important in this connection is the presence of a bed of peat twenty feet thick under eighty feet of marsh mud, as shown by a boring at Aulac described by Mr. Chalmers. The same observer has also found that in other places the marsh mud is underlaid by post-glacial clay containing shells of species still living in that region, though in cleared and quieter waters than now prevail in Cumberland Basin, and that this clay merges into the marsh mud. At that time the present Cumberland Basin was a shallow lave around which peat bogs were growing; it received the waters of the seven small rivers still flowing into it and emptied by a single narrow fresh water channel along the course of the present Cumberland and Chignecto channels. The subsidence of the land, the same which has drained the lower valleys of the St. John, St. Croix and the other rivers of this region allowed the tide to creep farther and farther up the channel until it reached the lake above, which it converted into a brackish, and later a salt, lagoon. At first the water would not be very muddy nor the tidal fluctuations great in the lagoon, but as the land continued to sink, the currents would become more powerful, erosion more active and the water so muddy that marsh formation would begin around the margin of the basin and at the head of the tide on the rivers. Thus gradually the conditions of the present day were brought about."

There are several interesting pages on the formation and reclamation of the marsh. In these pages we learn that at ordinary tides the rivers do not overflow their banks nor reach the dykes at all. But at the spring tides every month they rise higher, the waters rush more swiftly and gathering up yet more mud from banks and bed, overflow the banks, and unless stopped by the dykes spread abroad over the marshes. When the water thus leaves the channels, however, its speed is at once checked, and soon it comes to entire rest, it can no longer carry its burden of mud and drops most of it. It is then called spent water, and the sooner it is turned back whence it came from the better, as it is very injurious to vegetation, chiefly because of the salt it contains. The thickness of mud deposited at a single tide varies from a small fraction of an inch on the higher planes to several inches on the bottoms of lakes which have been opened by canals to the tide.

At the head of the tide in the rivers the incoming salt water meets the outgoing fresh water and drops its sediment. Thus the rivers are tending always to dam themselves up at the contact of salt and fresh water, and they would doubtless do so completely were it not for the scouring out of the channel by the fresh water when the tide is out. The heads of the rivers, too, show another important phenomenon, viz., the level of high tide is higher there than at their mouths, owing to the tendency of tidal rivers to pile up their waters on account of the inertia of their rush.

MARSH CROPS.

On the economics of the marsh Dr. Ganong says: "When reclaimed from the sea they are wonderfully fertile, and in this respect they are unsurpassed if they are equalled by any land in eastern Canada. They are not, however, equally good for all crops, but are best for grasses and grains, to which consequently they are almost entirely given up. Root crops will grow upon them, but not to advantage. They form also extremely rich pasturage, and to some extent (less than formerly) are used for this purpose. The grasses which grow upon the best parts are the usual upland English hay grasses, which become very tall, very dense, and of very superior quality, luxuriant but not rank, producing easily three tons and upwards of the best hay to the acre. In less well drained places coarser grasses grow, but these, too, are of good value. No attempt is made to take two crops a year, though some farmers allow their cattle to fatten on the rich aftermath. No fertilizers of any sort are placed upon the marshes, and the only cultivation consists in an occasional plowing, on an average once in ten or fifteen years, when a single crop of oats is sown, after which the land is brought at once into grass again.

The struggle with the fresh water is incessant and is the greatest care and expense of the marsh farmer. Poor drainage soon leads to the replacement of the valuable English hay by the less valuable sorts, which in turn yield to yet coarser kinds, the series ending in the appearance of useless spagnum mosses and bog plants. Abundant and intelligent ditching is the only remedy. Farmers differ so much, however, in willingness or ability to face this problem, that areas alongside of one another under similar natural conditions, with but a ditch between, differ greatly, one bearing the richest English hay, and the other the coarser kinds."

WHY THE SOIL IS SO PRODUCTIVE.

The analysis of marsh soil has never properly explained its fertility. On this subject Dr. Ganong says there is a popular misunderstanding. He says the smallness of the percentage of potash, lime, nitrogen has misled those unacquainted with the chemistry of soils. In fact, the richest contain as a rule less than one per cent. of those important substances, and quantities much over one per cent. so far from making the soil richer, actually injure it, for the roots of plants are unable to absorb any but very weak solutions of mineral substances.

Dr. Ganong accounts for the great fertility of the marsh in the following statements: "The mechanical composition of a soil is important chiefly because of its relation to the supply and circulation of air and water through it. The finer a soil is, other things being equal, the better it will hold water in the hygroscopic state, and hence the better it is for the constancy of water supply to the vegetation. But on the other hand, the finer it is the less air will it hold and allow to circulate, and air (i. e., the oxygen) necessary for the respiration of roots, is well nigh as essential a constituent of the soil as water. The soil of the marshes being much finer than the average, is better than the average for holding and delivering water, but is worse than the average for aeration. For the latter reason it is adapted only for vegetation with superficial or extremely slender roots, and such the grasses are, while thick-rooted forms, like trees or root crops, needing better aeration, cannot grow, or at least cannot thrive there. An extremely important property of soils is their power of circulating water and mineral matters. Every particle of moist soil is surrounded by its film hygroscopic (and capillary) water holding mineral matters in solution and these films are in continuity. But the relations of these films to the soil particles and to one another are such that they are as it were in a state of unstable equilibrium, so that when water is removed (if not too rapidly), it is restored from neighboring particles, which draw upon others more remote and so on until the equilibrium is restored, and this adjustment is the more perfect the finer the soil. When thus travelling the water carries its dissolved materials with it. Moreover, owing to the operation of the process of diffusion, the minerals are tending to distribute themselves through the films of water, even when these are at rest, from the places where the minerals are more abundant to the places where they are less so. The law of water and mineral movement in soils may be thus expressed: In a homogeneous soil the water tends to distribute itself evenly throughout the mass, and the soluble minerals tend to distribute themselves evenly throughout the water; a draft at one place upon water and minerals, therefore, is a draft upon the entire mass if the rate of removal be not more rapid than the equilibrium-restoring power of the soil, which is the higher the finer the soil. It hence follows that in a homogeneous or nearly homogeneous soil, the plants, if their demands be not greater than the power of the soil to distribute the water, are not dependent for water and minerals simply on such parts of the soil as can be reached by their roots, but can draw upon the entire mass the more readily the finer soil is. Here I believe we find the explanation of the lasting quality of the fertility of these marshes when reclaimed; it is due to their depth in combination with their homogenity, aided by the great water-holding and transferring power given by their fineness of soil. The abundant water falling upon them as rain or derived from the melting snows in spring, must saturate the soil to considerable depths, if not to the bottom, thus bringing the water and minerals of upper and lower levels into continuity. Now there is no circulating ground water in the marshes, as the invariable failure of wells dug upon the marshes shows; furthermore, they lie below the level of the fresh water of the sea, and hence there can be no under-marsh drainage, no more indeed than the surface drainage allowed by the shallow ditches or natural runways. . . . .

This lack of deep drainage has two important consequences; first, there is little or none of that loss of the valuable soluble mineral matters such as is constantly occurring on well drained upland soils (a fact which alone goes far to explain the lasting fertility), and second, practically the only outlet for the water of the soil is by evaporation from its surface or transpiration through the plants, both of them necessitating an upward movement, which tends to bring up the minerals from below. That this effect is actually produced by evaporation is shown by the fact that bald spots even on long reclaimed, hence long-drained marsh, always show an efflorescence of salt, and the same is true of all freshly evaporated surfaces of marsh mud, no matter how long this may have been shut off from the sea. These facts can only be explained by supposing that the salt is brought up constantly from the greater depths. Further, practically the entire vegetation of the marshes consists of the grasses which both have a comparatively low rate of transportation themselves and also protect the ground in an unusual degree from evaporation. Hence the upward movement is but slow, and when the warm summer sun promotes transpiration from the plants, the draft made upon the water of the upper soil is not too rapid to allow the latter to recoup itself from the lower layers and that from a still lower, and so on to a considerable or even great depth. This upward movement brings with it the minerals which are not only thus being lifted towards the surface by the ascending water streams but are constantly diffusing from the lower richer to the upper poorer layers. It can thus come about that the entire depth of the marsh soil is valuable to the vegetation above, and it would be only when the minerals from the entire depth are exhausted that the fertility would begin to fail. A corollary of this would be that those marshes whose fertility is more lasting are the deepest, and those soonest exhausted are the shallowest, which certainly agrees in general with the actual facts as observed by those familiar with the marshes."

As the question of the lasting fertility of the marsh is one of considerable interest and is frequently a matter of discussion, I have given quite fully Dr. Ganong's theory.

APPEARANCE OF THE MARSH.

In speaking of the characteristics of the marsh country he says: "The country around Cumberland Basin is of ancient (Palaeozic) formations, rounded into low smooth hills and ridges separated by radiating river valleys. Among the ridges lie the marshes, seemingly level as the sea, and, like it, they fill bogs, surround islands, and are pierced by points. Seen from the neighboring ridges the marshes have an aspect characteristic and beautiful. They are treeless, but are clothed nearly everywhere with dense rich grasses in many shades of green and brown, varying with the season, with the light, and even with the winds. For the most part the merging of the colors is irregular, but in places owing to the different treatment given by different owners to their land, or to the presence of fields of grain or pasture lots, there is something of the checkered appearance usual in highly cultivated land. The frequent ditches marked by denser growths, the rare fences and the occasional roads or railways, are other signs of the operations of man. Towards the sea are narrow fringes of unreclaimed marsh, poorer in vegetation and gray from the weather, and farther back the green of the marshes gives place to the brown and grey of the bogs, which are further distinguished by irregular shrubbery and trees and many lakes.

Nobody lives upon the marshes, but scattered upon them are many great barns, all of one pattern, unpainted, and gray from the weather, and standing at any and every angle. These barns are one of the distinguishing features of the marshes, and give to them a suggestion of plenty which is a true index of the economic condition of this region, for here are the most prosperous and progressive farmers and the most thriving country towns in Eastern Canada.

When one goes upon the marshes from the upland he is likely to think them misnamed, for instead of the soft bottom and the rank growth associated with the word marsh, he finds everywhere a soil as firm as the upland itself, and on the reclaimed parts a growth of the finest grasses luxuriant but not coarse. Indeed, a near view of the reclaimed marsh shows scarcely anything different from the best fine-soiled upland grass land. The marsh country is beautiful to look upon, and in addition there hovers over it the charm of a long and varied history. It was a part of the ancient Acadia and inherits the memories of that picturesque, but ill-fated country. The student in his wanderings meets with many a reminder of the ancient regime.

FERTILITY OF THE MARSH.

The best marsh may be cropped with unlimited yield for decades together without any return to the soil. There are places on the Aulac which are known absolutely not to have been renovated in any way since 1827, and are believed not to have been treated in any way for fifty and perhaps a hundred and fifty years before that, which are bearing crops today as bountiful as ever. These are, of course, among the best places, but there are parts, particularly on the marsh longest reclaimed, which are more or less exhausted. Such marsh may have its fertility restored by fresh mud brought in by the sea when allowed behind the dikes. Marsh situated near the towns and well placed for drainage is worth upwards of $180 to $200 per acre. There are large areas valued at $100 an acre, while prices range, of course, from these downwards."

The following paragraphs on the Tide of the Bay of Fundy, taken from the Moncton Times, are of interest in this connection:

"The Bay of Fundy, having about as great a range of tides as any place in the world, causes the most regular tidal bore known. It is not so awesome in its manifestation as the bore of the Tsientang near Shanghai, which is known as the Great White Thing of Hang-Chau, and has the honor of having temples and priests maintained to pacify it; but the Great White Thing comes only at long, though absolutely regular intervals, while the famous bore of the Petitcodiac River on the Bay of Fundy comes every day with the regularity of the tide itself.

The Petitcodiac River is in New Brunswick, and the finest spectacle is when the bore reaches Moncton. For nine and even nine and one-half hours before the arrival of the bore the river ebbs steadily seaward, until in many places its bed is almost dry and there is only a trickle of water in parts of it.

By the time this surprisingly long ebb has run itself out of Moncton and the water is at its lowest stage there, it is half tide at the entrance to the river more than twenty miles away—that is, while the river bed at Moncton is almost dry, the water is standing twenty-one feet high at the mouth of the river. But the river bed at Moncton is twelve feet above the low water level at the mouth of the river. Hence, at half tide the river at the entrance is standing nine feet higherthan the low water level at Moncton; in other words, at every half tide Moncton becomes a huge tidal sink, lying nine feet below the level of the water in the Bay of Fundy.

Now all this enormous mass of water is pressing with all its might to get into the narrow funnel of the river. The sea continues to rise steadily. Suddenly it bursts over the bar and the great bore begins.

For an hour every day before its first visible sign reached Moncton the noise of its splendid coming is heard. Like the roaring of a mad surf it beats through the town. There are wrath and menace in it, and the stranger who does not know of the bore might well imagine that the sea had broken its bonds and was coming ashore to sweep the solid land.

The actual bore begins eleven miles above the entrance of the river at a place called Stony Creek. The incoming flood travels those eleven miles in two hours—a most remarkable rate of speed for water to move, for, notwithstanding the many loose statements about the velocities of currents, the average tidal current does not run more than two miles an hour, and a three-mile current is a swift one indeed.

But at Stony Creek the river becomes contracted and the speed of the bore then increases so greatly that it travels the eight and a half miles to Moncton in one hour.

It comes, not as a wave, but as a solid white wall, that speeds so swiftly that it actually rolls along and over the river as if the brown stream were solid floor. Its angry front, rising sheer above the river three, and sometimes even five feet high, extends straight from bank to bank. It is the front of an inclined plane whose higher end is toward the sea; so that this bore looks like a sloping hill of water moved inland by some weird agency.

When that enormous tide has run its full, the river is twenty-one feet deep at Moncton. So fast does it rise that a record has been made of a rise of nine feet in seventeen minutes. At the entrance of the Petitcodiac into the Bay of Fundy the actual rise is forty-two feet above low water level.

Another strange freak of the tides is at St. John, New Brunswick, where each tidal change makes a waterfall in the river that is smooth and calm at all other times. At the time of ebb this waterfall falls down the river. At the time of flood, the waterfall pours up the river and thus actually tumbles up hill. The freak is due to a rocky ledge that runs across the river and retards the tidal flow both ways till there is a vast "head" of water behind the current and at last enough accumulates to burst over the ledge. It is a strange spectacle that one never wearies of watching."

THE INTERVALES OF THE ST. JOHN RIVER VALLEY

FORMATION.

An interesting portion of New Brunswick is the alluvial or intervale land of the St. John River. Its foundation, laid in the early stages of the river's history, before the gorge where are now the Reversing Falls was broken open, has become the subsoil for one of the most fertile agricultural tracts on the continent of America. The geological story tells us that, when the St. John River emptied its waters into the Bay of Fundy through the Kennebecasis, the Marsh Creek and Courtenay Bay, its water level was from fifteen to twenty-five feet above the present mean.

At that remote period large areas of York County, nearly half the present settled part of the county of Sunbury and much of Queens County were under water. There was then a triangular lake the corners of which might be said to be at Rusiagornish, near Fredericton Junction, at the head of Grand Lake and at Hampstead Village This would make a triangle with indented sides with a base of about forty-five miles along the west side of the river and side lines, if straight, of about fifty miles. While there would be various points jutting out into this lake and long and deep inlets where are now the valleys of streams, the area above described may be blocked off on the map as approximately correct. Within it is to be found the main body of the alluvial land of the St. John valley. In addition to this the St. John River from the mouth of the St. Francis down, and nearly all its tributaries have a considerable acreage of intervale here and there along their courses.

The exact area of this land is difficult to estimate and it would be still more difficult to separate the arable and more valuable extent from the lower lying and marshy portion.

FERTILITY OF THE SOIL.

Roughly speaking, there must be at least three hundred square miles or nearly 200,000 acres, all of which spontaneously grows various grasses in profusion, and a large portion of which under cultivation, produces magnificent crops of all kinds. Lack of drainage is the only drawback to a considerable additional area.

The underlying soil, or the first deposit, forming this land was gravel and clay. Later when the river became more rapid from the opening of its mouth by the rending apart of the rocky barrier at the Reversing Falls, coarser particles came down with spring freshets and, as clearances were made on the upper reaches and the soil got a chance to wash, the alluvial flats got a coating composed of some sand and vegetable matter mixed with the clay. This has given an upper soil of beautiful texture. This upper soil has not been laid on evenly or regularly. The currents and slack waters have resulted in building up some sections and leaving others. As a consequence we find in some places a splendid soil ten feet deep while in others there is but a slight vegetable covering over the blue and white clay.

In other places again, there is black soil—clay and vegetable matter mixed—of considerable depth, but full of water. This is only reclaimable for crop growing by a system of drainage similar to that pursued in Holland where windmills lift the drainage water to the river and ocean level. When our population becomes sufficiently dense to warrant the expenditure large areas can thus be reclaimed by dykes and windmill drainage.

HISTORY.

Some of these intervale lands were the sites of the earliest settlements. As early as 1605 French adventurers made their way up the river and found on some of these alluvial flats Indian corn fields and there are traces of French occupation here and there which antedated the English occupation which began about 1762. At that time a small band of Massachusetts colonists formed a settlement at the place now called Maugerville. They were joined by others who took up the alluvial lands between Maugerville and the Jemseg Rivers.

The settlement at Maugerville was visited by Hon. Charles Morris, the surveyor-general of Nova Scotia, who in a letter dated 25th January, 1768, said:

"Opposite to Oromocto River, upon the northerly side of the River St. John, is the English settlement of disbanded soldiers from New England, consisting of about eighty families who have made great improvements and are likely to make an established settlement there, and by some trials they have made of hemp upon the intervale it succeeded beyond their expectation. I measured hemp myself that was nine feet high, that had not come to its full growth in the latter end of July. They generally have about 20 bushels of maize and about 20 bushels of wheat from an acre of land, that was only cleared of its woods and harrowed without even having a plow in it. When I was on the river last year, I saw myself, eighty bushels of Indian corn raised from one acre of land that had been ploughed and properly managed. I would observe that the corn raised on this river is not the same kind as the corn in New England; neither the climate or soil would be suitable to it.

They get their seed from Canada and they sow it in rows about three feet distant as we do pease in our gardens; it takes about a bushel to sow an acre. The ears grow close to the ground as thick as they can stick, one by another, pointing outwards like a chevaux de frise upon each side of the rows. The richness of the soil, the manner of sowing it and of its growing, may account very easily for its producing so much to the acre. Some of the old French inhabitants of the river have informed me that they have raised in a seasonable year, near one hundred bushels of Indian corn per acre."

When the Loyalists of New England came in 1783, they found Maugerville and Sheffield, largely pre-occupied by the settlere above mentioned and the population clustered about Maugerville, which was then the principal place. At this time New Brunswick was under the provincial jurisdiction of Nova Scotia and was called the County of Sunbury, and Maugerville was the shiretown.

The old Sunbury County records give something of an idea of the people who lived and did business at that period. One of the earliest deeds on record is unique in its way and worth quoting. It is dated 11th of July, 1769 and conveys from Charles Morris, of Halifax, in the Province of Nova Scotia to Jonathan Hartt, of Morrisania in the same province 500 acres fronting on the river St. John and situated about six miles below the present city of Fredericton. The consideration to be given was that after five years from the date of the deed, the said Jonathan Hartt should pay to the said Charles Morris two shillings each year for each hundred acres and after ten years from date to pay four shillings annually for each hundred acres forever. If, however, at any time Jonathan Hartt wished to dispose of the premises conveyed in the deed, he was to give Charles Morris and his heirs or assigns the first chance to buy and the preference. Then, if the said Morris would not give as much money as any other Protestant person the said Hartt should be able to sell and give a clear title to any Protestant person who would engage to live and reside thereon.

On the 7th day of May, 1784, Samuel M. Nevers, of Maugerville, in the County of Sunbury, in the Province of Nova Scotia, for the sum of twenty pounds conveyed to Nathan Smith, of the same place, a lot of land on Middle Island containing seven and a half acres more or less.

In 1787 two hundred and fifty acre were sold for £37 10s. 6d. and in 1788 seventy acres were sold for £42 3s. 6d.

At that remote period these lands were comparatively low priced, but in the early years of the 19th century they rose rapidly in value and before the introduction of railways they were the principal source of supply for the St. John market. Large quantities of hay, roots and vegetables of all kinds, as well as beef and mutton wer marketed. A common plan with many farmers was to put their roots, potatoes and other vegetables into the hold of a sailing vessel, then to pitch hay on the deck and build it up as in the mow of a barn. These vessels would then lie at the St. John wharves until their load was sold out. At this time and during the American war and as long as the reciprocity treaty with the United States was continued, these lands were valued highly, selling up to a valuation of one hundred and fifty dollars per acre for the cleared portion. With the latter third of the century, and railway development almost everywhere except along these very lands, there was a rapid decline in value and an exodus to Carleton County, Aroostook County, Me., and to other United States points, so that today intervale farms may be bought for one-third of what they cost fifty years ago.

PRESENT CONDITIONS.

The present generation owning these lands have never taken kindly to stock raising and are dropping this part of their business almost entirely. Farms whereon twenty-five years ago from fifty to one hundred head of cattle were kept today are keeping one cow. Hay is the principal market crop and large areas which are not producing the best quality of grasses are left uncut and unpastured. On some farms, market gardening, to which the higher portion of the land is admirably adapted, is now being developed, and squash, cucumbers, cabbages, tomatoes, corn and all vegetables of the highest quality are daily put on the St. John and Fredericton markets. While this business is a profitable one, it is only utilizing a few thousands of acres of these splendid farms and thousands of acres are lying practically idle in the absence of live stock.

This week and every week for the past three years the City of St. John alone has been sending to Ontario points at least two thousand dollars for fresh beef and yet here within seventy miles of the city we have a chance to produce beef more cheaply than can the Ontario farmer. It is to be hoped that some enterprising stockman will take advantage of this splendid opportunity, and that the St. John River intervale may again be known as the home of some of the best stock raisers in Eastern Canada.

FRESHETS.

Before leaving the subject a reference to spring freshets and their effect upon these lands is in order. As early as 1701 mention is made of terrible inundations and from time to time later we learn of houses and barns being floated away with spring freshets. In later years we know of the flood of 1854 which was the highest and the only dangerous flood upon the river until 1887 when the 1854 record was exceeded by nearly two feet. In 1888, there was another high freshet, but not within five feet of that in 1887. Since then there have been no freshets which caused more than the usual temporary inconvenience of roads submerged in low places and a restriction of agricultural operations until the waters should fall. While these annual freshets cause some inconvenience they at the same time give a fertilizing dressing to a larger portion of land and, so far as any loss of buildings is concerned, it is only the man who puts his buildings purposely on low ground or too near the river bank who has any need to worry about danger. At the same time this annual freshet with both its benefits and its inconveniences must yearly be reckoned with. It is, however, almost the only natural drawback to a soil and situation of surpassing fertility and genial summers where corn, grapes and melons grow to maturity and where cattle can be grown more cheaply than almost anywhere else in Eastern Canada.

CHAPTER VIII.

TO INTENDING EMIGRANTS TO AMERICA.

Ques.—Which are called the Maritime Provinces of Canada?

Ans.—Nova Scotia, New Brunswick and Prince Edward Island.

Ques.—What is the area of these Provinces?

Ans.—50,214 sq. miles, divided as follows: Nova Scotia, 20,907; New Brunswick, 27,174; Prince Edward Island, 2,133.

Ques.—Where are these provinces situated geographically?

Ans.—Between 45 and 48 degrees north latitude, on the eastern side of North America, and the nearest to Great Britain of any of her possessions on that continent.

Ques.—How long since these provinces were first settled?

Ans.—Halifax, the largest town in Nova Scotia, and the capital of the Province, was founded in 1749, and the province was given a legislative assembly in 1758. Fort Cumberland, the old Beausejour of the French, which is in the eastern part of New Brunswick, came into the possession of the English in 1755, and this province was set off from Nova Scotia and given a separate government in 1783, just one hundred years after William Penn received the grant of Pennsylvania. Prince Edward Island was given a seperate government in 1770. Any attempt to advance permanent settlement did not begin in these provinces, nor in fact in any part of Canada, except Quebec, till about the date of the Declaration of Independence by the New England colonies in 1776.

Ques.—What about the climate of the provinces?

Ans.—The climate is healthful. The winters are usually cold and bracing; the summers, though relatively short, are generally cool and pleasant. There are always a few days hotter than is quite comfortable as there are almost always a few days in winter colder than one would have if one had a choice. Vegetation is very rapid, as in most northern latitudes. The springs are often tedious, but come at last with a bound; autumn is generally a very fine and delightful time of year. There is no epidemic disease peculiar to the country. As an evidence of the salubrity of the climate, in a certain populous school district there has not been in twenty years the death of a child of school age. Many such instances are no doubt to be found. I mention this as coming under my own observation.

Ques.—In what do the natural resources of the provinces consist?

Ans.—Prince Edward Island, lying in the Gulf of St. Lawrence, is frequently called the "Garden of Canada." There is no better tillage land on the continent than much of the soil on the Island. Surrounded by water, it has advantages for fishing that can scarcely be surpassed.

Nova Scotia has extenrive coal mines. Her output of coal last year was nearly six million tons. She has also gold, iron, and plaster, all of which are being developed. The northern and western part of the province is rich agriculturally and specially adapted for mixed farming; while the western counties are celebrated the world over for apples and small fruits. The Annapolis Valley is coming to be looked upon as one of the great fruit growing districts on this continent. Last year's shipments amounted to 300,000 barrels, and judging by the increase in the last few years the industry is only in its infancy.

New Brunswick is not so rich in minerals as Nova Scotia, but she has more good farming land, and her forest wealth is greater. The three provinces have a sea coast of over a thousand miles, giving fishing privileges unsurpassed. Nova Scotia's lobster catch alone last year totalled two million dollars in value. New Brunswick's lumber exports amounted to 421,080,449 feet in 1906.

Ques.—What are the educational advantages of the provinces?

Ans.—There is an excellent system of free common schools in all the provinces. Each provincial government contributes annually a large sum for educational purposes. The provinces are divided into school districts, a tax is levied on the property of the districts to supplement the amount paid by the government. A poor man with a large family has the chance of giving all his children a good common school education and is not required to pay more than a poll tax of a dollar and fifty cents a year. There are also high schools, colleges and universities in all the provinces, and a very general interest is taken in the question of education. Any settler coming to this part of Canada with a family need not be in the least uneasy about opportunities for giving his family an education, unless he settle in the woods miles from his neighbors.

Ques.—What about church privileges?

Ans.—If there is any mistake in this matter it is that there are too many churches. The Roman Catholic Church is strong here, as in most Christian countries, and all the leading Protestant denominations are well represented.

Ques.—I suppose, then, the provinces are increasing rapidly in population?

Ans.—No, New Brunswick and Nova Scotia are making a small gain, while the population of Prince Edward is decreasing.

Ques.—How do you account for this state of things?

Ans.—In the last twenty-five years there has been in almost all civilized countries a movement of the rural population to the cities, brought about in part by the increase of manufactures, as wherever there are manufactories there must be men to operate them, and in part by the fact that improved farm machinery has taken the place of manual labor and less men are required on the farm than formerly. Then in the most prosperous period in the Maritime Provinces, next to agriculture, ship-building was the important industry and furnished an excellent market for the produce of the farm. Now, wooden ships have been almost altogether superceded by iron and steel steamers, and those who depended on this industry have had to leave the country or find some other employment. The United States, our southern neighbor, having had a hundred years the start of us, had already her manufactories developed to such an extent that she was in a position to give employment to all Canadians who wished to give up farming or were thrown out of work by the dying out of the wooden ship-building.

Ques.—Do you think that the hundred years' start that you say the United States had over Canada accounts for the lead that country has over Canada at the present time?

Ans.—I am sure it does. Canada as a Dominion will not have reached its fortieth birthday until the first day of July next and she has made more rapid advance in that time than the United States made during the corresponding period in her history. The notion that the prosperity of the States was due to the republican form of government has been exploded. The growth of the country is due to the energy and business aptitudes of its people and especially to the fact that there was plenty of room on the new continent for the overcrowded populations of Europe.

Ques.—We have drifted away from the point in which I am most interested, which is, what have the Maritime Provinces to offer to intending emigrants to America?

Ans.—If an immigrant is able and willing to do manual work there never was a more favorable time to come to these provinces than the present. There is a scarcity of both skilled and unskilled labor. The coal owners want miners, the fishing interest is always open for development, the farmers are calling for help on the farm, and their wives want help in the house. The lumbering business is prosperous and cannot be carried on without labor. The machine shops and foundries, the shoe factories and numbers of other enterprises that are springing up all over the provinces are looking for skilled labor to carry them ahead successfully. There ought not to be any difficulty in placing a large number of men in these provinces within the next ten years.

Ques.—You say there is plenty of work to be had. What about wages?

Ans.—That depends of course somewhat upon the man. Wages have gone up very decidedly in the last half dozen years in every industry, and they have reached that figure now that, if a man is industrious, economical, and a good manager, he will soon begin to lay up property. I think an immigrant makes a mistake in demanding too much wages at first before he has learned the ways of the country and become accustomed to the system of working in the place where he has come to make a home. If your new man blunders and injures a piece of machinery, or for the want of a little knowledge, easy to obtain but not yet in his possession, gets things in a tangle on a busy day in the hayfield, as he is likely to do, the proprietor will overlook the mistake much easier if he is not paying the man the top wages for the year.

Ques.—What are the chances for a man of limited means getting started as a farmer?

Ans.—There is what is called the "Free Grants Act" by which in a number of the counties in New Brunswick a man can get a hundred acres of forest land suitable for settlement at a nominal cost. A man with five hundred pounds can buy a farm on which, if he understands his business, he can make a comfortable living, and after buying the farm have something left to stock it also.

Ques.—How does it happen that farms are for sale at that price? It looks as if the business was not very profitable.

Ans.—There are several reasons for this state of things. (a) Almost any man will sell his farm in this country for the sake of change or profit. And sometimes he will leave it whether he makes a sale or not, if he takes the Western fever badly. (b) Again there are those who have fallen heir to farms who do not know how to manage them to get a living from them, that is such a living as they believe they can earn in some other way. They hear of Mr. A. getting a thousand dollars a year as an implement agent or as a farm manager, or that some manufacturing establishment is paying large wages for workmen, and the old place is deserted or sold or left to the old people to do as they like with. If the old people are left as they are sometimes the place is soon on the market.

Ques.—Do you think a man could make a living for his family on a farm that could be bought for fifteen hundred dollars?

Ans.—It depends, it is true, on the man. If he understands the business and has got the value for his money he can not only make a living but he ought soon to become independent, as the word is understood in this country, that is be in a position to put by something each year; but very much depends upon the management both in the house and outside. Numbers of immigrants from the old country have started in all the provinces empty handed and have become very prosperous men. The present president of the Farmers' and Dairymen's Association of New Brunswick is one of these men. He is one of the Scotch immigrants from Kincardineshire that came to New Brunswick in the seventies and settled on the Tobique River. Some of these immigrants left the country afterwards but most of those who remained did well and a few became large land-owners.

Ques.—Would you advise an intending emigrant from Europe to settle in the Maritime Provinces rather than in the West?

Ans.—I believe there is room for a certain number of people in the Maritime Provinces and a chance for them to do quite as well in every way as they could do in the West; while the expense of coming would be less and, if they wished to return home to revisit friends they would be the gainer in time and money. The West is a great country both in size and material resources and there is room there for a great population. It is still, however, a very new country and old world advantages have only reached there yet to a limited extent. In these provinces there are schools and churches and distributing centres at your door, with daily mail in most districts and highways and railroads within reach of most settlements. There is always an abundant supply of fuel which is a great consideration in a cold country.

Ques.—You implied a little while ago that the chances in the Maritime Provinces for newcomers are better now than a few years ago; if that is so, why?

Ans.—Yes, I think that is true for all comers but particularly for the laboring man, whether he represents skilled or unskilled labor, wages are higher for all workers. Produce, too, brings a better price than in the past. (The price of flour does not vary much but this comes chiefly from the Western prairies.) How long this may continue it is impossible to say, but in several articles, the produce of eastern farms, the price has nearly doubled in the last few years, and now if a farmer has anything to sell he does not have to look long for a purchaser and can get money for his goods. This was not the state of things when some of the farms that are now on the market were first offered for sale. The business of farming, too, in the earlier years of these provinces, as you will see mentioned in a former part of this work, was not thought to be as respectable as same other professions. Now the educational propaganda in the interests of farmers as represented by the Farmers' Institutes, Experimental farms and Agricultural Colleges, has altogether changed that state of things, the business is looked upon now as one that is most desirable and to be sought after by the young, rather than shunned as it was formerly.

Ques.—Still I don't quite understand why there should be so many farms for sale in the Maritime Provinces as are from time to time reported, if it is a good farming country?

Ans.—I am not surprised at your difficulty, the conditions in the old world are so different from those in the new. For instance Europe has a population of nearly four hundred millions, which is about one hundred persons to the square mile. England with Wales has a population of 440 to the square mile; Scotland, 122; the United Kingdom, 341; Belgium, 588, Denmark, 133; Italy, 293. New Brunswich has 12, Nova Scotia 22, Ontario 12, Quebec 9; while the whole of Canada has less than 2 to the square mile. The difference in density of population between Europe and America makes it difficult for Europeans to comprehend the readiness with which a Canadian or American will sell or desert his farm and take the chance of getting another one that will suit him better. In the older countries land is held by the same family for generations or until it has come to be looked on almost as a part of themselves, and they rarely think of parting with it unless compelled by stress of circumstances to do so. In many instances it is entailed from father to son and cannot be sold without an act of parliament. Here it is entirely different. Very few farms in America have been in the possession of one family more than a generation and if a man is offered what he considers a top price for his farm he is almost as likely to take it as he would be if he were offered a good price for a horse he wanted to sell. He says, "farms are plenty in this country, I can buy another and perhaps a better one." It must not be supposed that the men who offer their farms for sale are compelled to do so. This is only the case in rare instances.

Ques.—Then why do they offer them for sale?

Ans.—There are several reasons. Mr. A. has heard of a better district to live in,—it may or it may not be in his own province; Mr. B. wants to try the West; Mr. C. has concluded there is more money in trade; Mr. D. has had a bad year and perhaps has a touch of the blues, and Mr. E. may have fallen behind in his finances and thinks by selling his farm he can pay his debts and purchase in another locality where farms can be bought for less money. It will be easily seen in a country so sparsely settled, where there is land for all who want it, there will always be farms for sale. In a certain township in New Brunswick there are eight farms in a block in the market now, or will be in a very few years. These farms are worth about forty thousand dollars. Two of them are in the market now. The owners of five out of the eight have no sons to heir them, which will make it necessary to sell them when the present owners are done with them. (As a matter of interest to those who may think the world will have to resort to the teachings of Malthus, the owners of five of these farms sixty years ago had born to them forty-eight children. The present owners of the whole eight farms have less than twenty children and there is not a son at home at the present time.)

Ques.—Is there any immigration to these provinces at the present time?

Ans.—There is quite a steady immigration most of the time—more than we get credit for. Western Canada is kept so constantly before the public that the Eastern provinces are scarcely noticed. Even the people that do come scarcely seem to be counted. You will perhaps be surprised to know that relatively, or in proportion to our square miles, the Maritime Provinces would only need to get about two thousand new settlers per year to have as large a share of the immigration as the West is now getting. This is calculated on the basis that Canada contains about three and a half millions of square miles and that only fifty thousand square miles of this territory lie in the Maritime Provinces. These provinces are really so small a part of the whole Dominion that they do not always get fair play. Formerly, the great Province of Ontario towered above everything. It seemed to be forgotten that that province was seven times larger than New Brunswick and nine times larger than Nova Scotia and four times larger than the three Maritime Provinces put together. Now it is the West that is dwarfing us all, Ontario as well as the Maritime Provinces.

Ques.—In what part of the Maritime Provinces would you advise one to settle who thought of farming?

Ans.—For the reasons I have given, there are farms for sale in the most forward agricultural districts as well as in places where the soil is not so fertile. While fruit will grow reasonably well in nearly every part of these provinces, still, if you feel like making fruit a specialty, the Annapolis Valley in Nova Scotia is the finest fruit district. If you make the selling of hay and stock raising your particular line, those parts of the counties of Cumberland in Nova Scotia and Westmorland in New Brunswick that are at the head of the Bay of Fundy would be the place in which to locate; also the counties on the St. John river that include the intervales of that river. If dairying is your aim, you will find Kings County in New Brunswick the banner county in that province for cheese and butter. Cereal farming is followed generally in all the provinces. The northern counties of New Brunswick, Kent, Northumberland, Gloucester and Restigouche, and Carleton in the west, are all good grain growing sections where farming can be profitably prosecuted. Any interested in the Island will find its strong points enumerated in an earlier chapter in this work.

Mention was made earlier of the success of Mr. Innes, President of the Farmers' and Dairymen's Association, who came to the Tobique with the Scotch emigration in the seventies. The following letter explains itself:

Mr. Trueman: Tobique River, Jan. 19, 1907.

Dear Sir,—Yours of the 17th December to hand. You will have to excuse me for not answering you sooner. You are right in saying I came with the Kincardine emigrants. Although I settled in the Kentore part; the settlement is in two parts—the Kincardine Road and the Kintore Road—but all in one settlement. As a general thing, the people are very comfortable with good homes. There was a number who left for the States, but some came back again. I worked seven years at horticulture before I came here—was gardener and coachman to a gentleman and lady for five years. I came right into the green woods and started to make a home for myself and succeeded, but not without many a hard struggle. Having no capital I had to hire out a good deal for the first few years. As for recommending New Brunswick for Old Country people to make homes in, that all depends on the kind of emigrants. Get the right class of emigrants and they will succeed, although I think there are better places in Canada. The Danish Colony you refer to is doing fairly well; they make very good settlers, hard-working, industrious people.

Yours truly, DONALD INNES,

CHAPTER IX.

EARLY ORGANIZATION IN AMERICA.

ONTARIO.

I find in an appendix to the annual report of the Ontario Fairs and Exhibitions for 1902, written by C. C. James, Department of Agriculture, that the Province of Ontario organized its first agricultural Society in the year 1792 under the patronage of Governor Simcoe, whose annual subscription was ten guineas. The members of this society did not forget good fellowship. They had a monthly dinner together at which "a silver snuffbox was handed from host to host to be filled for the next dinner." This snuff box was ornamented with the horn of plenty and was, it is said, a fine piece of workmanship, and the wish is expressed by the writer from whom this is taken that the snuffbox, which has been lost, may be found and given to the present society that it may be handed down as an heirloom. This society seems also to have been something of a literary society as fifty volumes belonging to the society were sold or transferred to the Niagara Library in 1805. To show the cost of books at that time and in some degree the class of men who belonged to the society, here are the names and prices of some of the books: Young's Agriculturist, price £10; Museum Rusticus, £3 4s.; Young's Tour in Ireland, £1 8s.; Wright's Husbandry, £3 12s.; Douglass' Agriculturist (3 vols.) £2. A list is given of sixteen of the fifty, the total value of which is put down at thirty pounds, seven shillings. This Niagara Library numbered at one time a thousand volumes and when it went to pieces it fell into the hands of Andrew Heron, the proprietor of a leading library to whom the society owed quite a large sum of money.

The first legislative recognition of Agricultural Societies in the Province of Ontario was in 1830. Under an act passed in that year to a society that would import valuable live stock, grain, grass seed, useful implements, or whatever might conduce to the improvement of agriculture, the government promised to grant two hundred pounds, provided the society raised fifty pounds. A society formed in York (now Toronto), May 30th, 1830, had the Hon. George Crookshanks as President. The first work done by this society was to purchase the following seeds to be ready for spring sowing: One cask of barley, one of beer or bigg; one of potato-oats, one of Dalhousie or Lothian oats, one of Angus or Ayre, one bushel of clover seed, one of Lucerne, one of sanfoin, twenty pounds of ruta baga or Swedes, twenty pounds of globe turnip seed, white or black. In addition to come by way of Montreal next year: One cask of red English wheat, one of white wheat, and one of several sorts; also the following implements: A drill harrow, a double mould-board plough, a horse hoeing plough, a book of patterns of farming utensils, not very expensive, say £1, £2:10 or £3. Prizes were offered by this society, also for ploughmen as follows: £3, £2, £1. The exhibition was held in York market square at 1 p. m. Monday, October 4, 1830. The ploughing match was held on D'Arcy Boulton's farm, near York. The prize given for the best imported horse was £4.

After holding this exhibition this society decided to import four bulls. Colonel Edward W. Thompson was selected to make the purchase, which he did in New York State.

The first Provincial exhibition in Ontario was held in Toronto, October, 1846, in the old residence of the Lieutenant Governor, which stood at the corner of King and Simcoe streets, now occupied by the present residence of the Lieutenant Governor.

Judging from the following paragraph which was published in the Herald of October 19, 1846, the management had not succeeded in pleasing everyone any better than it does at the present time: "The Grand Provincial Agricultural Association which offers five pounds premium to the best pig and five shillings for the best oil painting, comes off at the government House grounds on Wednesday next, when we hope to see, if not exactly a live lion stuffed with straw, at least something almost as marvellous." It may be that the immense development of the bacon industry in Ontario is owing in considerable measure to this five pound prize for the pig.

It is not my intention, and it is not necessary, to trace the advance of agriculture in Ontario since the exhibition of 1846, for is not this progress written in the chronicles of a multitude of farmers' institutes and societies especially organized to forward this advancement, and also in the reports of the agricultural college of Guelph, to which reference has been made in another chapter.

QUEBEC.

The first agricultural society in Quebec was organized on April 6th, 1789. The Quebec Gazette of that time says: "On the 6th of April the rank and fashion, nobility and clergy of all denominations, as well as commoners, crowded at the Chateau St. Louis to enter their names as subscribers to the Quebec Agricultural Society, warmly patronized by His Excellency, Lord Dorchester. Hon. Hugh Findlay, Deputy Postmaster General, was chosen Secretary." There follows a list of sixty-one names, headed by the Rev. Philip Tosey, military chaplain. Then followed fifteen names with Honorable prefixed, the Canadian Bishop and his coadjutor and the Cures of all the Parishes within reach of Quebec. The Gazette goes on to say: "What a representative gathering, the Governor and leading members of his council, the principal members of the Bench, the chief officers of the churches, the leaders of trade and commerce, the seigniors, one at least who had fought with Wolfe on the Plains of Abraham (Samuel Holland.)" French Quebec had become British and both nationalities united harmoniously to advance the resources of the country. Leomoine says: "This list of honored agriculturists alone would furnish material for a thick quarto of chronicles of olden times." It was claimed in the earlier part of this work that the agricultural societies organized in Halifax and in the counties of Kings and Hants were the oldest in Canada, but it would seem that the Quebec Society antedates the Nova Scotia societies by about seven months, and there is an intimation that a society was founded in Montreal in the latter part of 1788.

There is an impression that Quebec did not from this date make so rapid a development agriculturally, as this fine start would indicate. If this is so, she has in the last two or three decades been redeeming the time, for in none of the provinces has there been so great advance as in Quebec. And now through the liberality of Sir William McDonald and the clear-headed oversight of Dr. Jas. Robertson, Quebec is going to have the best equipped college and experimental farm, not only in Canada, but on this continent, if not in the world. This College is now being built at St. Anne de Bellevue, a few miles out of Montreal, under the direction of Prof. Robertson. It is to include a Normal School with all modern facilities for the training of teachers for rural work. The residence will be capable of providing rooms for 225 women students and 175 men students, and these will take their meals in a common dining room. There will be no tuition fees for students in the Province of Quebec, but nominal fees will be charged students from other provinces. It is estimated that the buildings, site, etc., will cost Sir William $1,500,000, and $2,000,000 will be set aside for an endowment fund.

STOCK IMPORTATIONS AND EXHIBITIONS.

All the provinces have ever been ready to vote money for the importation of stock and for agricultural exhibitions.

Nova Scotia for a period of years tried district exhibitions but finally decided to locate at Halifax and for a number of years has had an annual provincial exhibition at the capital city. These expositions have most of the years been a direct financial loss to the province but this fact has not seemed to weigh in the slightest with the government. Believing the indirect gain to the province largely overbalances the direct money loss to the Exchequer, the managers continue the exhibition with all the inspiration and energy that are ordinarily shown in an institution that is piling up large dividends for its promoters.

Prince Edward Island, as has been previously stated, turned its attention particularly to the importation and breeding of horses and has made a name for itself in that branch of stock raising, while not neglecting other lines of agricultural development. The Island has located its annual provincial exposition at its capital city, Charlottetown, and can give the other provinces pointers on the way to hold successful gatherings of this kind.

New Brunswick was the first of the provinces to make an importation of pure bred stock from the old country. This importation was made in 1825 or 1826, and but few decades have passed since in which this province has not imported some new blood to improve the native stock, either from Great Britain, the United States or the Upper Provinces.

In the eighties an importation of horses was made (not the first by any means) and the government undertook to keep a certain number of them at its own expense, letting them out for service by the season to the highest bidder. The experiment was dropped as soon as possible, mainly because of the expense involved. In the meantime, however, there was an improvement in the horse stock of the province.

In spite of the interest the government and a certain number of private persons have always taken in introducing better stock into the province, the present stock of the country is far from what it should be. This is accounted for in part by the fact that the improved breeds require better care and treatment and when this is not given them, they soon degenerate. It has been proved useless to put improved stock in the hands of men who will not properly feed and house them.

The first provincial exhibition in New Brunswick was held in the city of Fredericton in the year 1852, as described in another part of this work. The next one was held in Sussex in 1861, the third in Sackville in 1872. Since that date St. John and Fredericton have divided the honors. A very successful exposition was held in St. John in 1883, the centennial year of the birth of New Brunswick. It was at this exhibition that cream separators were first introduced in this country. The motive power at that time was steam. Hand separators were not dreamed of at that time. A few years ago a syndicate was formed in St. John to hold annual exhibitions, but it has seen uphill work, and the scheme has not met with all the success its promoters desired or expected. Under this movement, however, a number of very excellent exhibitions have been held. Fredericton and Woodstock have shown a great deal of push and energy in getting up good shows of this kind and at the present time, Chatham is to the front in the successful management of this form of encouragement to the agriculture of the northern part of the province.

UNITED STATES.

The first society for the promotion of agriculture in the United States was founded in Charleston, on the 24th of August, 1785. The objects of this society announced in the Act of Incorporation, were to promote the interests of agriculture, to institute a farm for experiments, to import and circulate foreign articles that are suitable to the climate of Carolina and to direct the attention of agriculturists of the State to useful objects.

The Philadelphia Society for the promotion of agriculture was instituted the same year and is still in existence. It is stated that one of the objects of this society was to promote the establishment of other agricultural societies in the principal places in the country.

The New York Society with the same objects in view was organized on February 26th, 1791, and the Massachusetts Society in 1792. This society is still in active existence under the old name and is doing good work.

The State of Connecticut formed its first agricultural society August 12th, 1794, and after existing as a state society for twenty-four years, by an act of the legislature in 1818, it was changed to the County Society of New Haven and is still in active operation.

The third agricultural society in the United States was organized at Hallowell, in the State of Maine, 1787.

The Connecticut Academy of Arts and Sciences, located at New Haven, was organized in 1799. It lent its aid to agriculture and is still in active existence.

Connecticut is mentioned as one of the pioneers in America, if not the pioneer in agricultural education and the scientific investigation of agriculture.

In 1846 Mr. Thos. P. Norton was made Professor of Agriculture and Agricultural Chemistry at Yale University. The earliest distinctively agricultural literature of the country, so far as can be traced, is by Jared Eliot, of Killingworth, New Clinton, Conn. His essays on husbandry began in 1747-8 and continued for many years.

Prof. S. W. Johnson, of Connecticut, published his famous book, "How Crops Grow," in 1868, and a Yale graduate of 1792 invented the cotton gin in 1793.

It will be seen by the above dates that Canada in organizing the first forward movement in agriculture was very little behind the United States. Whether Canada's present claim that in Guelph she has the best agricultural College on the Continent can be maintained or not, certain it is that in the last twenty years Canada has made wonderful progress all along the line of advanced agriculture and is still forging ahead with an energy and strenuousness that will make hard work for competitors.

CHAPTER X.

PAPERS WRITTEN IN 1871 AND 1882.

I shall now add two papers which were read before gatherings of farmers a number of years ago.

It will be noticed that many of the problems these dealt with are still unsolved. More than a third of a century has passed, but New Brunswick is still without an institution in which the farmers' sons can receive higher education without being educated away from the farm. Of Nova Scotia and Quebec this can no longer be said.

"In nature everywhere there is diversity. From the same soil is moulded the sturdy oak, the modest daisy, the tall pine and the graceful elm. By the same hand is formed the fleet deer, the noble horse, the fierce tiger and the gentle dove, and last, the great Architect's best work—man. In the human form and mind what diversity! Where are two minds that agree in everything? This diversity in mind is seen when man, in fulfilment of the sentence passed upon him when banished from his first inheritance, chooses his profession or calling in life. One becomes the silken robed priest; another unravels the subtleties and intricacies of the law; a third loves the healing art; a fourth is at home in the counting room; a fifth goes down to the sea in ships; a sixth drives his team afield and breaks the stubborn glebe. And then we have the statesman and warrior, poet and sage, scholar and philosopher, each following the path of his own choosing, and altogether making up that variety so essential to the happiness of the race. Of those who cultivate the soil, and supply the world with its bread and butter, I propose to speak for a short time.

A law abiding community may get on very well without a lawyer; a green old age is often reached without the aid, or in spite of the doctor; and men do live and prosper without the benefit of clergy. But no State, however peaceably disposed, and no individual, however perfect his physical organization, or pure his moral character, can dispense with the labors of the Farmer. In other and older countries the importance of the craft is fully recognized. If in New Brunswick, farmers have not stamped their mark as clearly as they should have done upon their country's history, it is not because they labor under any political disabilities which require an Act of Parliament to remove, but because there is want of that united action and fraternal feeling that should always exist among the "sons of the soil." Living, as farmers always must in the rural districts, at a distance from the great centres of population, and deprived to a large extent of the stimulus to intellectual exertion derived from intercourse with literary men, and following a calling which he has been told from his earliest years requires but little brains, it is not to be wondered at that farmers, as a class, do not stand intellectually in the front rank. But there is another reason for this state of things. To enter any of the learned professions, a regular course of training is indispensible. To be a merchant, a mechanic, or an artizan of any kind, a certain amount of book knowledge is necessary. A man can be a farmer, however, and a successful one, too, so far as the money making part of it goes, without being able to write his own name, or even knowing a letter in the alphabet; and there are scores and perhaps hundreds of such in our Province.

FARMERS NEED EDUCATION.

While these facts account for, and to some extent excuse, farmers of the present day for the low standard of intellectual culture found amongst them, it does not by any means justify them in not making every effort in their power to raise that standard. Those in every state who cultivate the soil must form no inconsiderable part of the population, and in these days of Democracy when the people have "divine rights," and are expected to rule, their influence, if used aright, ought to have no mean weight in the Councils of their country. Unable, like the professional, the mercantile and the manufacturing classes, to hide from the assessor and tax-gatherer large sources of revenue, the farmer is exposed to the fullest force of the highest taxation. Unable too, like the classes referred to, whose capital to a large extent is represented in their own persons, to remove from their country in times of bad government without having their property confiscated and their homesteads destroyed, the owners of the soil, in proportion to their means, are more interested in the government of their country than any other class can possibly be. If farmers then would wield that influence, morally, socially and politically, that their interests require, that their numbers give them a right to, and that the dignity of their calling demands, they must give more attention to intellectual development; in short they must be better educated. But how to educate the boy that is intended for the farm, so that when he is educated he will not turn his back upon the farm, is fast becoming a vexed question. So fully is this fact being recognized that a late English writer, when treating of the desirability of giving boys, intended for the farm, a better education, said that one of the greatest difficulties to be contended with was, that while that education was being acquired, they acquired a dislike, and in too many instances were physically incapacitated, for the labors of the farm. The stripling fresh from aollege, kidded and cravatted in the latest style, luxuriating in the belief that he is the eighth wonder of the world, may succeed in one of the learned professions, but as a farmer, never. The lad who has spent three years consecutively at an academy, in nine cases out of ten, will make but a sorry farmer, unless the "governor" can afford him a handsome yearly allowance.

The Alma Mater of the farmer must be the parish school until Agricultural Colleges are established, where the theoretical and practical are so combined that in acquiring one he will also secure the other. If then farmers are practically prohibited from the higher seats of learning, their first duty is, plainly, to use every means in their power to elevate the standard of Common Schools. With the advantages that these schools offer even now, and a thirst for knowledge, you cannot keep a boy in ignorance. But our schools can be very much improved, if, instead of offering a stipend that will attract only indifferent scholarship, the government allowance is supplemented by a sum that will ensure sollid attainments and moral worth; if, instead of small and unsightly schoolhouses, these are made comfortable and attractive; and if, instead of censuring the teacher at the first adverse account of his qualifications and conduct from your child, you would visit the school often and learn for yourself the difficulties to be overcome, and counsel and encourage rather than stand aloof and grumble and find fault, as is too generally done.

It is not, however, in this age so much the want of means as the want of a desire for knowledge that keeps men in ignorance. "Where there is a will there is a way" is as true of getting an education as of anything else. Some of the men who have scored the deepest mark on their country's history, and wrought out for themselves and for the world lasting good, have been self educated men. That which we acquire by diligent and severe application we set a higher value upon; and if we have stolen from our hours of sleep the time to read this or that work, or to perfect ourselves in this or that art, the knowledge so gained will be more valued and better improved than if it had come more easily or almost without effort. Farming, though one of the most laborious of the callings, still affords some moments of leisure and these, if carefully husbanded and properly improved, would enable the farmer to add largely to his stock of knowledge. It is not true, however, as a certain class of writers seem to think that from the time the sun enters the winter solstice until the earth again "puts on her livery of green," all the long winter evenings are at the disposal of the farmer, to be used as whim or fancy may dictate, and might all be devoted to the improvement of his mind. These writers seem to take it for granted that neither religious nor moral, social nor political duties, are to be found in the farmer's decalogue.—The Temperance movement has enlisted the sympathy of the working class more largely perhaps than any other class, and farmers have not been backward in devoting a portion of their time and influence to reclaim the fallen and to stay the tide of intemperance that is sweeping so many of the best and bravest into unhonored graves. The claims of religion too have neither been ignored nor forgotten by those who are largely dependent upon the genial sunshine and the kindly rains, and the week night prayer meeting claims its evening. The social nature of the farmer, or perhaps more correctly speaking of his wife and daughters, is not so easily satisfied, and not a few of the winter evenings are devoted by the young farmers to worshipping at the shrines of the goddesses of the social circle.

But notwithstanding the many claims upon the farmer's time, too much of it is wasted in lounging in the country store, gossiping in the workshop, and thinking about nothing. Young farmers, if there are any here tonight, read more and think more, think for yourselves. Study, reflect, observe, use your mental powers, so that when Professor Jones, or Lawyer Smith sits down to have a chat with you on any scientific or political subject, you will not be obliged to assent to everything he may say, simply because you know nothing about the subject. Do not let your curriculum be narrowed down to reading, writing and just enough of mathematics to save you from being cheated by the merchant; it being generally considered by farmers, I believe, that the merchant is the sharpest fellow they have to deal with. Digressing for a moment from the subject I would like to say this: There seems to be an impression among many farmers that our merchants are constantly on the watch to over-reach them in a bargain, or to take advantage of them in settling up the year's accounts. Not only do I not share in this impression, but taking into consideration the amount of business transacted by the mercantile class, and the many temptations there are in the business to take advantage of the ignorant, I believe the world knows no more honorable, high-minded, or upright class of men than its merchants. But to proceed with my subject, farmers, do not be content with knowing how to read, write and cast accounts, as they used to say. Dabble some in the sciences, if you have time. Make yourselves acquainted with chemistry and geology, so far, at least, as they are connected with your own calling. Keep posted in the general movements of the day by taking one or two first class papers. But, above all, I repeat, learn to think for yourselves. If you do this your minds will expand, you will enjoy life better, be mors respected, and exercise a more powerful and beneficial influence on those around you. There used to be an impression very general, I am not quite sure that it is altogether eradicated yet, that anybody could succeed as a farmer, if he was only willing to work. In fact, the less brains a boy had, in all probability, the better farmer he would make, and the dunce's profession, if there was one in the family, was quickly settled. The world, however, is fast changing in this matter, and, in these days of rust and weevil and blight and mildew, it is pretty generally conceded that it takes a pretty clever man to be a successful farmer.

WHY OUR BOYS LEAVE THE FARM.

It is remarkable and not a little amusing to read the folios advising young men to stick to the farm. Volumes are written detailing the dangers and temptations of city life. One would think after reading them that every large city was full of traps and pitfalls, set on purpose to catch the rustic. We are told too the professions are overcrowded, and that the competition in trade is so sharp that there is absolutely no room for another firm. Third class lawyers and broken down merchants are put in one scale, and the successful, happy and contented farmer, surrounded by his happy wife and smiling children, in the other; and there they are dangled until one would suppose there would never be another lawyer or merchant, but all the world would betake themselves to the plough and the pitchfork. But, strange perversity, wonderful stupidity, after all those lectures, those warnings and scoldings, we are told that on this continent there is only one farmer where there ought to be five! And weekly, almost, we hear of homesteads being sold, because the sons have either left the farm or intend to do so as soon as they can get away. Now I protest against this urging boys wholesale and indiscriminately to become farmers; it defeats the end it has in view. If a business, so universally known as farming, is not properly appreciated, to be constantly urging its claims upon the young makes matters worse rather than better; and to suppose that every man who fails in the other calling—as many seem to—would have made a successful farmer, would be about as wise as to suppose that every blockhead, under favorable circumstances, would make a clever man. But why is it, that so many farmers' boys prefer other ways of getting a living than that practiced by their fathers? That such is the case is by no means an unmixed evil; for not a few of our most successful merchants and cleverest professional men are the sons of farmers. The young judge largely by appearances; they have not yet learned that "all is not gold that glitters," and hence are often deceived. They draw comparisons and make conclusions, too, very readily, and in the comparison of the calling of his father with that of the professional man, the former is almost sure to suffer by the comparison, simply because the judgment has been formed from mere appearances. For instance, the man of law or medicine dresses in the latest style, drives a 2.40 horse, seems to have plenty of money, lives in a well-furnished house, is pleasant in his manners, is often successful as a politician, and not infrequently fills the highest offices in the gift of the State. These are put in the one scale, while in the other are put the plain clothes, scant purse, hard work, low intellectual standing, awkward gait, stammering address, and want of political success, of the farmer. The result of such a comparison must be against accepting the farm.

Again, the practice common among all classes, but particularly among farmers, of refusing to give their sons any portion of their property, until long after they have attained their majority, is not conducive to the multiplication of farmers, and by this we lose not only many men as farmers, but numbers are driven from our country. Let me illustrate: Farmer Jones has a grown up son, steady and industrious, who suddenly becomes morose and dispirited. His father cannot tell what is the matter with John, but

"The mother with a woman's wiles can spy
What makes the youth so bashful and so grave,"

and very soon is in possession of John's secret, which in substance is, he has taken a liking to Squire Smith's daughter, and would like to start in life for himself, wife and all. In due time Mrs. Jones informs Mr.

Jones of the nature of John's ailment, and what will cure it. Mr. Jones is amazed. The very idea of John wanting a wife! of John wanting to settle! pshaw! Thus the matter ends with Mr. Jones, but not with John. Very soon it is reported that John Jones is going to the States. And when our Johns go to the States they very seldom return. But after all, the great reason why boys don't stick to the business is there are no prizes in it. There are no millionaires among retired farmers. But I may be told that there are few blanks, and that industry, economy and good management are sure to be rewarded in a farmer's life. So they are in a professional and mercantile life, aye, better rewarded, too, for this reason, perhaps, that the supply is more limited. In an age that teaches "get money, honestly, if you can, but get it," farming will not be the popular profession in practice, whatever it may be in theory. Its profits are too slow; there is not enough of stir and bustle and excitement in it to commend it to "Young America."

I will not stop to discuss the relative dignity of farming in comparison with other pursuits. To do so would to assume that the calling is not able to sustain its own dignity, and to assume likewise that the few, who with an air of superiority, passing by on the other side, say, "O, he is only a farmer," were deserving of more than silent contempt. This much, however, I will say, that if one of the secular callings is more respectable, more honorable, aye, and more noble than the others, that calling is the farmer's. If one of the ways in which we gain a livelihood is calculated to produce a higher type of man, mentally, morally and physically, than the others, it is the one that has for its basis the tilling of the soil; and the farmer who sells deal for butter, or sand for oats, is a hundred times meaner, more despicable and more contemptible, than the man who sells wooden nutmegs, or cornmeal for mustard. Why, the very instinct of our profession, if I may be allowed the expression, points towards honesty and independence of character.

FARMING DOES NOT PAY HIGH DIVIDENDS.

But why is it that farmers do not suceeed better, financially? I know there is an impression among many—from the fact that farmers are able to supply so many of their wants with their own labor—that they are all rich, and as a consequence are considered fair "game" by the collectors or agents of every charitable institution. Now there are no just grounds for such an impression. I am prepared to assert, without fear of successful contradiction, that, in proportion to the labor and capital invested, the business pays a lower percentage than any other prosecuted in New Brunswick. I do not say that this must necessarily be the case. I believe it ought not to be so. I feel sure that it would not be so if the business were conducted on the same enlightened principles on which our manufacturers conduct theirs. For instance, think of a manufacturer carrying on the technical part of his business in the same way and with the same machinery that his father did half a century ago; and yet this is almost precisely what the majority of our farmers are doing. In trying to point out some of the reasons why the Craft does not pay better, I shall have to find some fault with a class of men for which I entertain a high respect. I have often thought, if ever it fell to my lot to propose a toast at our agricultural dinners, it would be this: "Our old men, may they live long, be kind and kindly used;" yet I have somewhat against them, especially the rich ones, and it is this: They have either invested their surplus funds in gratifying a desire, too common among land owners, of adding field to field, or farm to farm, or they have placed them at interest, after being well assured that the security was good, or they have hoarded them in a stocking or in some other convenient place, but in no individual case that I can now think of, as coming under my observation, have they re-invested in the farm itself—that is, in introducing a better system of cultivation, to any appreciable extent, in the way of underdraining their land, employing labor saving machinery, or practicing improved methods of saving manure. In a conversation recently with a young man, near a piece of marsh owned by his father, I said, observing but few stacks of hay on the marsh, "Is that all the hay that marsh cuts?" "Yes," said he, "we have let it run out for want of ditching." And yet the owner of the marsh had money at interest, and as the Scotch say always kept a good sum "past him." Another who owns a farm, worth from ten to twelve thousand dollars, gave me a very earnest account at least of the amount of manure made on his farm, but as it was allowed to lie exposed to sun and rain, wind and frost, for several months during the year his crops didn't look any better than those of his neighbors. Now men in most other professions, as soon as they get an amount of spare capital, use it in improving and extending their business. The manufacturer introduces new machinery, so that he may be able to produce a better article at the same or less cost. The merchant aims to enlarge his business, so that he may sell more at less percentage. So it should be with the farmer. But the waste in the manure heap and the drowning of the marsh lessens the amount produced, and as a consequence, makes the cost of production greater and the result of the whole is the profits are reduced. Again I would impress upon farmers generally the very great importance of keeping a debit and credit account in more of our transactions. How many of us can tell what our wheat, our buckwheat, our oats, or our potatoes cost per bushel? or what our butter, beef, mutton, pork, or cheese costs per pound? Very few, if any of us. We know what we get for it in the market, but we are not sure as to which pays us the best. The very article that we think we are getting the highest price for may be the one on which there is the least profit. The prosperity of every country depends very largely upon the cost of living in it. The cheaper a man can live, the cheaper he can work; and the lower the wages, the lower will be the price of the manufactured article. Farmers should study this more, and aim to produce enough at the minimum price, and of course get the maximum price for it, if they can, and they will be sure to do that if the article is worthy of it.

A GLORIOUS CALLING.

But it is easier to pull down than to build up, to find fault than do better ourselves. There is progress even among farmers, and if it is not so rapid as we younger men would like to see, still it is progress. If the business, from a money point of view, has not been very profitable, it has its compensations. It is conducive to health, happiness and the growth of moral principles. It is a glorious old calling, honest and respectable, and honored and respected by king and peasant. Let us be careful to bring no disgrace upon it. Not among the least of its blessings is that it teaches the young to be industrious, a blessing which in after life they cannot be too thankful for. While the most ignorant can often gain a good subsistence by it, there is scope in it for the finest intellect and most cultivated talent. I would again urge upon young farmers the importance of improving their minds, and of setting up a higher standard for themselves. Let them acknowledge few superiors, but be kind and courteous. Cultivate a love for the beautiful and true; adorn your persons less and your homes more; talk less about the last trotting match, and more about the principles and aims that ensure success in life. Always remember that work is honorable, and one of the first duties is to be useful.

(The following address was given at the meeting of the Farmers' Association held in Riverside on Feb. 8th and 9th, 1882.)

The tendency towards organization, which is one of the marked features of the present age, has fairly taken hold of farmers, and we have dairy conventions, short-horn breeders' associations, granges, farmers' clubs and associations like the present one; all of which point out clearly that farmers, at last, are fully awake to the importance of adding to their own experience the experience of their fellow-craftsmen. I think, too, it may be taken as a plain indication that there is a sincere anxiety to get out of the old ruts and uses of the past into a better and more profitable system. Whether this increased desire for information is the springing up of a love of knowledge for its own sake, or whether the stern logic of events has had most to do with bringing it about, it is certain that the sharp competition in the world's great markets of today makes it a matter of the first importance that farmers should thoroughly understand the practical as well as the theoretical part of the business, and this means more than is generally conceded. But some one may be saying: "You know better now than you practice." That is true to some extent, and it is but human. Our knowledge, however, is too largely of that nebulous kind that makes it unsafe, or at least dangerous to the pocket, to put it into practice. It is negative rather than positive. We, perhaps, know that this system of feeding stock, or that method of cultivating land is not profitable, but just what system will yield the right percentage, and the knowledge to carry the details of such a system into practice is what we do not know, but what we must learn if we would succeed in making our business either profitable or pleasant. It seems to me that the great question or problem that confronts us now is, how shall we make the negative information positive? How can we in the shortest space of time and at the least cost, place within reach of the farmers of New Brunswick the means to secure that amount of knowledge relative to their business which will place them on an equal footing, so far as a practical understanding of their art goes—with the producers of other countries? In attempting to solve the problem it will be in point to look at and examine the steps taken by other countries in attaining the position we are aiming at. In doing this, if we commence the examination with the United States, our neighbors, it will be found that about thirty years ago, the Northern or Northeastern States were, in several particulars, very much in the same position as we are today—their wheat crop very uncertain, their virgin lands becoming exhausted and the competition of the West just then beginning to loom up before them. What did their leading men do in these circumstances? A writer in Blackwood's Magazine, 1881, can tell you better than I can. This writer after speaking of the multiplied proofs of the zealous and intelligent spirit of improvement which was extending rapidly over all the Northeastern States, says: "We find the central government of the confederation occupied in organizing the plan of an agricultural bureau on a scale worthy a great and enlightened nation." And just here let me say I am glad to hear that the present enlightened government of the Confederated Provinces of Canada is organizing a plan for a similar bureau in this country. "We find also," the same writer goes on to say, "the several State Legislatures anxiously encouraging every species of improvement, that of New York in particular, devoting large grants to the support of exhibitions; preparing to found an agricultural college, distributing widely and gratuitously the annual public reports on the state of agriculture, and finally sending to Europe for a celebrated chemist to assist in maturing their plans and setting Senators and great officers of State at the feet of a British Gamaliel laying down the law to them on the true principles of the all important science of agriculture. Nor are the owners of the land asleep. It is a strong indication of the growing desire for information that seven or eight agricultural periodicals are published in the State of New York alone."

From this energetic and intelligent beginning, improvement and advancement was very rapid. Agricultural colleges were soon founded in the leading States. The Agricultural Bureau was a centre and aided by the postal service of the State new seeds and new plants, after being tested, were sent into the country, and new modes of cultivation were taught, and thus the experience of other countries was brought before the people by the same institution until the amount of agricultural products exported from the country is something astonishing even in this age of large figures. At the risk of being tedious I am tempted to give you an illustration of what the Agricultural Department did for the rural population of Virginia. These people had been accustomed to go out in the fall and gather the leaves of the wild sumac which were boiled up and sent to the cities to be sold. The American sumac is an inferior article, its sale value being found in the tannin it contains. The imported sumac is said to be richer in tannin and the American article sells at a much lower price. Added to this is the fact that the native sumac discolors the leather to which it is applied in tanning. A scientist sent out by the Department of Agriculture spends months in experimenting on the plant. He examines its leaves in every stage of its growth; he tries the roots, the stems and the glands and the result is worth a thousand times the cost of all his labor. If the leaves are gathered in June instead of in the fall they will be richer in tannin than the imported article and the leather will not be colored in tanning. This is but one of the many ways in which the Agricultural Department at Washington is benefiting the people of that country. Turning now to Europe let us judge, if we can, from a few facts what importance they attach to agricultural schools and colleges there.

AGRICULTURAL EDUCATION IN GERMANY.

In a recent report of a committte of the French National Assembly on a project for the establishment of a new agricultural college, the superiority of Germany over France in spite of inferior natural advantages is fully shown and is clearly attributable to the better development of agricultural education in that country and the more common and intelligent application of scientific rules in agricultural practice.

There are in Germany alone 184 agricultural colleges, besides a great number of schools of lesser grade, reaching down to the primary instruction. Germany spends seven times as large a proportion of her income on agricultural education as does France, yet the French Government last year voted $300,000 for agricultural education alone; $150,000 of this amount was for three agricultural colleges and the National Institute at Paris. In addition to these colleges and schools of lesser grade in Europe, there is a large number of what are termed agricultural stations, where every kind of research is pursued that is likely to be of value, either to agriculture or horticulture, some stations devoting their attention to a single line, while others do a variety of work, according to the wants of the locality. There are sixteen of these stations in Austria, ten in Sweden, three each in Russia, France and Switzerland, two in Belgium, and one each in Holland, Denmark, Scotland and Spain. In England, although there are no government stations such as described, there are a number of private farms where the same kind of work is done, the public getting the benefit. One gentleman, a Mr. Laws, has recently appropriated £100,000 to carry on a farm and laboratory as an experimental station. These agricultural stations are being introduced into the United States in the last ten years, the old State of Connecticut taking the lead. North Carolina and New Jersey have one each, while Georgia has one and proposes to start another. New York granted $40,000 in 1880 to start one in that State.

The work of the Connecticut station is principally devoted to the examination of commercial fertilizers and plants, and the testing and examination of seeds.

But you ask what have these countries to show for this very large expenditure in schools, colleges and experimental stations? I answer, Europe containing an area less than half of this continent, with its northern part a frozen plain and its southern very mountainous, supports a population of nearly 300,000,000, and from the sugar beet—a root that we have not learned to cultivate on this continent yet—supplies herself with from seven to eight hundred thousand tons of sugar every year, or about half the amount she requires for home consumption. Great Britain, with a population of thirty-five million or about three hundred to a square mile, even with a succession of bad harvests is supplying two-thirds of the bread products for her population. These facts, I think, ought to satisfy reasonable minds that the expenditure in European agricultural education is not wasted.

WHAT IS CANADA DOING ?

Now, coming nearer home, what is Canada doing to advance agricultural education among her people? Nova Scotia, I believe, cannot boast of one school or college where the science or practice of agriculture is taught, and New Brunswick and Quebec occupy the same proud position. Ontario has a well equipped college and experimental farm, and is sending out every year a large number of men well taught in the theory and practice of their chosen calling, Prof. Brown, of the Guelph institution, says:

"I consider the problem of agricultural education is being gradually and surely unfolded in our case." Nova Scotia has sent a few students to the Guelph College, and I was glad to see that the general examination prize in one of the departments was given to a Nova Scotian, which was the next best thing to its being won by a New Brunswicker, as no doubt it would have been if there had been one there. If in "simple justice to the farmer boy he should have as good a chance as the one who goes to college to get what he can there to help him to attain success in some other field;" if, as "it is now believed, that energy, common sense and intelligence will everywhere outrun energy, common sense and ignorance, and that technical and scientific education will confer on those who enter any profession immense superiority over those who have it not;" then the question arises, is New Brunswick doing all she ought to place within reach of those who want it facilities for securing that education that confers such immense superiority.

In view of what is being done in other countries to advance agricultural education, has not the time arrived for the Government of New Brunswick to turn its attention more decidedly in the same direction? I am not disposed to complain or to bring any charge against the present Government or any government in the matter. I believe the successive administrations of this Province, of whatever shade of politics, ever since Prof. Johnston, the British Gamaliel referred to in Blackwood, was invited to report on the agricultural capabilities of our province, have shown a very strong desire to do what they could to advance the farming interest. We have a boast here in New Brunswick from which the press seems to draw a good deal of comfort, one that I think we all duly appreciate. I refer to the fact that we have more miles of railroad per capita than any other country or state; and I see from the utterances, as reported lately from gentlemen high in authority, that railway extension is still to be the watchword, or the power behind the throne of the Government. While farmers, as a class, generally speaking, ought to be the last persons to oppose opening up the country by railroads, yet if such roads have nothing to carry, they are perhaps not the most desirable property, as perhaps some experience gained in this county may testify. Anything that will add to the productions of the country must increase the traffic on the roads already constructed. But to come to the point at once. If the Governments have money to subsidize railroads, they can spare a few hundreds to make a start in an agricultural station in this way. We have now,and will have for the next ten years, I suppose, what is called a Government stock farm. What I would ask the Government to do is to place on that farm and in charge of it a thoroughly practical and scientific farmer, such a man as Prof. Sheldon, who, as all remember, made a hurried tour through the Province, under the auspices of the Government, in the fall of 1880. If this course were pursued, and the right kind of a man secured, the farm would then become a means of education to the people, and perhaps eventually become an experimental farm and school.

FARMERS MAKE THE PROFESSION.

And now, gentlemen, our business has always been popular, but practically to the man who is anxious to control large wealth, or to the man who is ambitious of literary or political distinction, it has but few attractions. In some lights farming is improving rapidly, but probably for some time to come it will not be attractive to the class of men just referred to. Some persons are concerned about the status of the farmer. The business will be just what we make it, respectable or otherwise. If it is conducted in such a manner as to make it pleasant and fairly profitable—and I know of no reason why it cannot be—then it will be attractive, particularly to the youth. If those who follow the business are grasping, narrow-minded, and ignorant, the calling will be judged by them. If, on the contrary, farmers are intelligent, broad-minded, liberal in their views, and refined in their tastes, then practically, as well as theoretically, agriculture will be looked upon as one of the noblest of all the ways in which man is called to labor and supply the wants of his nature.

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